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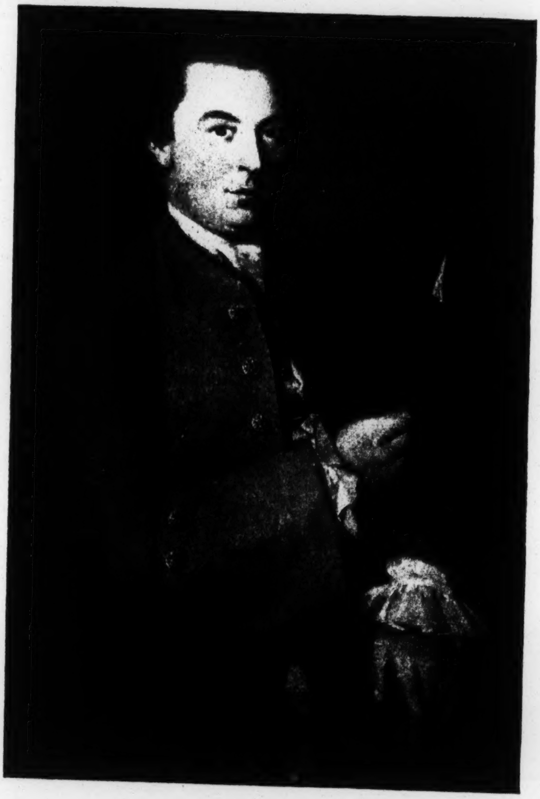

HALL JACKSON

[[1739-1797]]

[From Fernelius' Universa Medicina, Geneva, 1679.]

ANNALS OF MEDICAL HISTORY

New Series, Volume V March, 1933 Number 2

DR. HALL JACKSON OF PORTSMOUTH

By RUSSELL LEIGH JACKSON

SALEM, MASS.

SOMETIME in the spring of the year 1757, a young man, not yet eighteen years of age, appeared at the Middlesex Hospital, one of the great public institutions in London, and applied for admission to a course of lectures then being given regularly to groups of young medical students from all parts of England and many of the colonies.

The youth was Hall Jackson of Portsmouth, New Hampshire, sent over by his father, Doctor Clement Jackson, one of the principal physicians of the little town by the Piscataqua, to absorb the rudiments of medicine and surgery in a manner which had at that time not been introduced into America, but in the belief that it would provide a better foundation for the practice of the profession and at the same time add a certain distinctive culture that might smooth the pathway toward success.

Although born and reared in a small village (he first saw the light of day at Hampton, on November 11, 1739) and without the advantages of a college education, Hall Jackson needed few apologies. He was an uncommonly well appearing youth. His clear, well-set blue eyes and broad, high forehead displayed intelligence. His nose was long and straight and his lips were full and rather more perfectly formed than one usually finds in a man. He was unquestionably a Colonial or a Yankee, as he would be called a few years later. Possibly a betrayal of certain provincial characteristics, not found in a Londoner, brought out his origin the more clearly. It is possible that he displayed an inquisitiveness and shrewdness, not often found in an eighteen-year-old English youth, that would have made it impossible to keep his American birth a secret from his London associates.

Apart from the natural curiosity that might have been felt about him, it is not apparent that he attracted much attention. Coming well recommended to England he found little trouble in making friends among the young surgeons at the Middlesex Hospital who, in turn, seem to have taken some pleasure in making him one of the small coterie of brilliant minds that spent hard hours of labor over their lectures and medical studies by day and more frivolous hours of congenial comradeship in various sections of London by night.

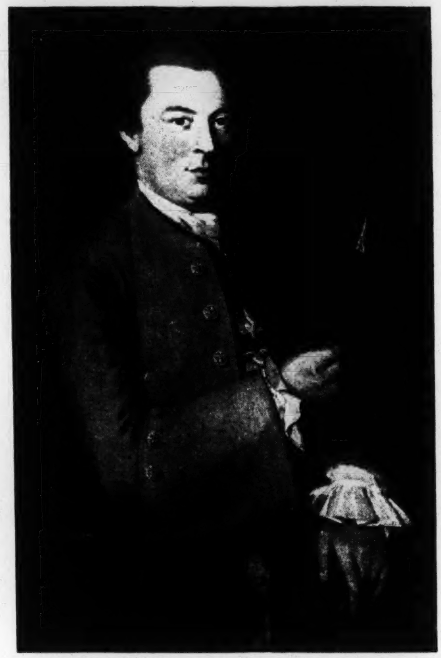

FIG. 1. DOCTOR HALL JACKSON. FROM THE ORIGINAL BY JOHN SINGLETON COPLEY WHICH HUNG AT LEIGH'S HILL FROM 1797 TO 1918. AT THE DOCTOR'S DEATH IN 1797 THE PORTRAIT CAME INTO THE POSSESSION OF HIS NIECE, MARY (LITTLE) PEARSON OF NEWBURY, WHO LEFT IT TO HER DAUGHTER, SARAH JACKSON (PEARSON) LEIGH, FROM WHOM IT PASSED THROUGH THREE GENERATIONS OF THE LEIGH FAMILY OF NEWBURY, MASS.

About the year 1720 the study of smallpox became of great importance in the medical world. Physicians from all over Europe flocked to London to gather information that would give them some real knowledge of this dreaded disease. For centuries, the smallpox had been the scourge of the old world. Many of the crusades of the Middle Ages had been doomed to destruction because of the overwhelming pestilences that killed off people like flies. Smallpox epidemics were also prevalent in the colonies, and Hall Jackson found while in London that the study of this disease was something that was bound to develop and that his reputation would be greatly enhanced were he to specialize in the subject. The best means of combatting this pestilence, he learned, was by inoculation and accordingly he began the study of this remedy with great sincerity. One of the physicians who was also interested in inoculation and who was taking a course of lectures at the Middlesex was Doctor Erasmus Darwin, a young man slightly older than himself, but who was already married and settled down to practice at Lichfield. They saw something of each other in their travels about London and a plate of beef and a mug of ale at the Cheshire Cheese were sufficient to bring them into the immediate presence of some of the celebrities.

Jackson met Doctor Samuel Johnson and naturally the inevitable Boswell, although not through the kindness of Darwin who was not friendly toward the lexicographer, and David Garrick also joined the circle. Jackson attended Drury Lane theater and had his first introduction to that institution of frivolity that would have brought a tinge of horror to his grandfather, Deacon Leavitt, back in New Hampshire, for the Puritan colonies of George the Second were not then ready for the theater.

An interest in botany developed through an introduction to Doctor William Withering of Wellington in

Shropshire, who was cultivating the foxglove, from which was produced the drug, "digitalis," and Withering passed his enthusiasm along to Jackson. When the latter returned to Portsmouth in 1760, he brought with him seeds of the foxglove taken from Withering's garden and thus was introduced into the new world this valuable specimen which has assisted medical science to a marked degree. Thirty years later Jackson was still enthusiastically raising foxglove in his garden at Portsmouth and he apparently took pleasure in sending packets of the seeds to his medical friends. He interested Doctor James Thatcher of Boston in the subject and one letter bearing upon it may be worth mention. Written under date of April 29, 1789, to Doctor Thatcher, Jackson says:

> With much pleasure I send you some seeds of foxglove and some of the leaves of same for your trial of its efficacy until you can cultivate it. It is a beautiful flower in a garden and has arrived at full perfection in my garden from seeds sent me by Dr. Withering.

Leaving no diary by which to trace his daily movements we are forced to conjecture upon his life in London. It is a matter of record, however, that while at the hospital he received honorable mention from the faculty for an ingenious invention by which a ball was extracted from a gunshot wound which had baffled the surgeons. Fifteen years later he made use of this device for the benefit of the wounded at Bunker Hill where he had been summoned to administer aid. And in addition he gave considerable time to the operation known as cataract couching and while at the Middlesex Hospital was given the opportunity of applying his skill. So proficient did he become that while he is not accredited with introducing this operation into America, he was, nevertheless, one of the earliest surgeons to perform it and he was usually successful. In the portrait of Hall Jackson by Copley, which hung for many years at Leigh's Hill in Newbury, may be seen his couching tools.

Sometime in 1760, he returned to Portsmouth, having gained probably more out of his three years in London than he could possibly have done in twice that time had he remained in the colonies. He came back a recognized authority on smallpox, a surgeon of reputation, and last but not the least, a young man of the world. His father was still the leading doctor in Portsmouth and a young man must acquire a practice, so while waiting for patients he opened an apothecary shop there, which he kept about a year giving it up to go to Hampton, where he practiced with his uncle, Doctor Anthony Emery, for two years. In 1763, we find him back in Portsmouth succeeding to his father's practice and apparently on the high road to professional success and personal popularity.

Despite the fact that he had made his own way in the world and had achieved a modicum of success, Doctor Clement Jackson was ambitious for his son. Nearly four score of years had passed since John Jackson, the great-grandfather of Doctor Hall Jackson, brought the name to the new world from Dartmouth in Devonshire, when he landed at Cambridge, Massachusetts, after an uneventful voyage, on November 4, 1679. According to the town records, the particular vessel which transported John Jackson to New England, namely the "Hannah & Elizabeth," also brought his wife, their three children, Clement, Sarah and Agnes, and a widow Joan Deering with her two children, who may have been close relatives. The vessel came under the command of Captain Lot Gordon, a friend of John Jackson's, who vouchsafed to transplant the progenitors of the future patriot to the stern and rockbound coast of Massachusetts Bay for the sum of 150 pounds. To this amount, at the end of the voyage, three shillings were added for medicine administered to the baby Agnes, who evidently developed an attack of colic en route. Definite information regarding the immigrant is of the most meager sort. He doubtless was of the yeomanry, or great mass of farmer-traders that constituted the backbone of England's middle class in the waning days of the seventeenth century.

We do not know why he left England. He apparently had no strong religious convictions. Although he probably never would have become a leader or have taken even a minor part in the affairs of the Bay Colony (at least there is no record to show that he ever attempted it) he did take himself out of the theater of action in Boston soon after his arrival by removing to the less tumultuous atmosphere of Portsmouth in New Hampshire and there he lived in quietude, enjoying the simple pleasures of the yeoman, undisturbed by the cares attendant upon wealth or political prominence. There his children grew to maturity. There his son, Clement, the grandfather of Doctor Hall, laid the foundation of a modest fortune and achieved a standing in the community that his father had never known. Apparently a latent spark of ambition, an eagerness or groping to occupy a better position in life became implanted in the son for he sought out the better class in the small town and made a good marriage with a member of the Hall family of Dover and Greenland, who were prosperous and established socially. His two sons, of the third generation, Colonel Joseph Jackson of Boston and Doctor Clement Jackson of Portsmouth, continued the strain, adding to their respective laurels, the former in the manner of wealth as a man of business and the latter in prestige as a physician. Something akin to the "change in phase" which carried John Adams of Braintree out of the mediocre drudgery of farm life to the exalted realm of statesmanship and service must have taken place in this third generation of John Jackson's blood, for from 1730 on until the family became extinct, his descendants were accustomed to a position in life that would have seemed most incongruous to their progenitor. This passion for intellectual attainment may have been the impelling force that prompted Doctor Clement Jackson, aided and abetted by his brother, Colonel Jackson in Boston, to send the youth three thousand miles away to make use of his native ability to acquire a knowledge of the science of medicine.

Shortly after Doctor Hall Jackson's return to Portsmouth again to take up the practice of medicine the smallpox broke out in Boston. It came during the winter and within the space of a few weeks developed into a real epidemic and scores of persons fell victim. The selectmen took measures to check its spreading but their efforts seemed to be unavailing. Several local physicians were hard at work among the patients trying to bring about a cessation of the plague but it was apparently gaining such headway that the town authorities were forced to look about for assistance and they naturally turned their eyes towards Portsmouth where lived the one smallpox specialist of known reputation. Doctor Hall Jackson was accordingly summoned to the stricken town and there he labored for five months. He was placed in charge of the hospitalization work and under his skillful direction the pestilence was localized and by careful treatment a great many of the patients were saved. The vast amount of information that he had absorbed in London worked to his advantage.

While he labored in Boston he stayed at the home of his uncle, Colonel Joseph Jackson, one of the selectmen, who was taking an active part along with Hancock and the two Adamses and Otis in the conduct of the precarious affairs which were bringing Massachusetts to the attention of king and parliament. He was serving as a selectman at the time of the Boston Massacre, March 5, 1770, and was closely associated with John Hancock. It was, in fact, expected that the Hancock and Jackson families would form a closer connection for Hancock was even then paying his court to Miss Sarah Jackson, the colonel's daughter, although the former eventually married Miss Dorothy Quincy and the latter Mr. Henderson Inches.

Doctor Hall Jackson as a member of his uncle's household was able to gain some idea of the feeling that was growing in Boston toward armed resistance to the crown if its demands were to be carried out through insistence on the part of the soldiery. The British apparently did not realize the attitude of the Americans or estimate their temper. Jackson had lived three years in London and he summed up the situation fairly correctly when he wrote, "The political pot simmers and begins to boil . . . " The ball of the revolution had been growing for a century and when the sparks became ignited it burst into a pent-up flame that startled the world—the colonies no less than England.

While Doctor Jackson was staying in Boston directing the smallpox inoculations in 1764 he met Doctor Benjamin Church with whom he was to be associated for a short time during the Revolution. He incurred the enmity of Church almost from the start. Church was an older man and was jealous, apparently, of Jackson's popularity and fame. He did not see why Boston should send to Portsmouth for a director of inoculations and he doubted that Jackson knew as much about smallpox as he would have one believe. The whole thing seems like a bit of child's play but petty jealousies and animosities were common in those days, particularly in those trying times, and Church's efforts to get rid of Jackson were fruitless. The latter stayed in Boston long enough to get the town under some kind of control and the scourge began to abate under his direction. He knew what he was doing and the impetuosity of youth coupled with the honor that he felt had been bestowed upon him by the town made him feel that to give way to Doctor Church would mean abject surrender and failure. Jackson did not run into Church again until the Revolutionary War was in progress and then came the open break in their relations and the subsequent disgrace of Church. Washington, himself, had a hand in the affair which terminated Church's career and by favoring Church got himself disliked by Jackson.

The better part of the year 1764 was spent by Doctor Jackson in Boston and when the smallpox scourge finally abated he received the thanks of the town and returned to Portsmouth. He was not sorry to do so for he was courting the charming widow Molly Wentworth and the marriage occurred the following year. Molly was the relict of Lieut. Daniel Wentworth of the Royal Navy, grandson of the old lieutenant governor John Wentworth. The Wentworths were one of the most aristocratic families in America. They possessed great wealth and lived in lordly style, exacting an almost medieval homage from the people of the province and giving in return their profound allegiance to the king at whose court they were frequent visitors. Molly, herself, was a daughter of Captain Samuel Dalling of Portsmouth, scarcely the equal socially of the Wentworths, but more than making up this "deficiency," surely in her personal charm, graciousness and natural ability. Molly was a widow of reputed wealth at the time of her marriage to Doctor Jackson and the event in St. John's Church in Portsmouth was an important one.

About a year later, Theodore, the doctor's only son who lived beyond infancy, was born. He died at the age of eighteen years, as he was about to begin the study of medicine. Not much is known about Theodore. He is believed to have spent considerable time with his relatives in Boston and was socially quite attractive and popular. As a matter of fact, he was probably too popular and attended too many gay parties which implanted the germs of the dread disease. There was another son, Samuel Dalling Jackson, who died at the age of two years and a daughter, Mary Elizabeth, who became the wife of Doctor Joshua Gee Symmes of Andover, Mass., a member of a family of considerable prominence, grandson and namesake of the Rev. Joshua Gee of Boston. There were no children who lived to maturity, Elizabeth Gee Symmes, Doctor Jackson's only grandchild dying at the age of ten years in 1803, only five years before her mother. Although Doctor Jackson has no direct descendants, his name has been borne by several collaterals, principally among the Little and Leigh families.

Doctor Jackson's experience in Boston had taught him the importance of the town's maintaining a hospital for the treatment of smallpox and upon his return to Portsmouth he put into motion the wheels of a movement to secure a location whereupon such an institution might be established. There seemed to be no fit place for it in Portsmouth proper and after a time it was decided that Henzell's Island in Portsmouth harbor would serve the purpose.

He gathered about him three doctors who were willing to work with him and who were not jealous of his reputation. They were Doctor Ammi R. Cutter, who had studied medicine under Doctor Clement Jackson; Doctor Joshua Brackett, a great friend of the family and Doctor John Jackson who belonged to the Point Christian shore family and was not connected with the Clement Jackson family in any way. None of these medical men had had any great amount of experience in the treatment of smallpox and surely had had little to do with inoculation but they were ready to begin the work and after a time the town of Portsmouth agreed to the erection of the hospital on the island far enough away from the town to eliminate any danger of contagion.

The hospital at last was opened and here Doctor Jackson practically lived for months. His heart was in the work and he did a tremendous amount of it for the smallpox plague was spreading throughout Massachusetts and New Hampshire. It is quite probable that his well-laid plans for the establishment of the hospital saved scores of fatalities. The hospital survived for several years and he continued his work among the patients until his fame became far-reaching. When the dread disease struck a community the first thing that the selectmen would do would be to send for Doctor Jackson and he usually responded post haste. This was true in the case of Marblehead in 1773. Late in the preceding year smallpox broke out in a few families and Azor Orne, Colonel Jonathan Glover, John Glover and Elbridge Gerry, who was later to sign the Declaration of Independence and become Vice President of the United States, petitioned the town fathers to establish a hospital within the limits of the town in order that the sick might be cared for. This the town fathers refused to do because they feared that inoculation would cause the disease to spread. Smallpox as a disease was not so well known as it is today and it was far more prevalent. People were ignorant of the theories and practices for treating the disease and finally the gentlemen named decided to take the matter into their own hands and build the hospital themselves. The building was erected on Cat Island and Doctor Jackson was summoned. It was a two story building, capable of caring for about twenty-five patients and an invitation was extended to anyone to come and be inoculated. Many responded but at length the whispering campaign started which resulted in the complete failure of the project; but not, however, until some good work had been accomplished.

People said that the hospital was spreading the disease. Persons who visited the hospital for the purpose of being inoculated were bringing the disease back to town with them. The hospital was a nuisance and Doctor Jackson ought to be told to go back to Portsmouth. But Gerry and Orne and Glover paid no attention to the rumors and the whispering which they knew was the result of ignorance of the subject. Jackson arrived in Marblehead on October 16, 1773, and immediately became superintendent of the hospital on Cat Island. It lasted a little over a month and came very near to causing an armed contest for men in boats stormed the hospital, pelted it with stones, smashed the small boats which were to carry messengers back to the main land for supplies and in almost every conceivable way the workings of the mob were in evidence. Finally, on January 26 of the next year, the building was burned to the ground. No one could be blamed for the deed for so many had a hand in it. The Marbleheaders did not want to be inoculated against the smallpox and finally the wiser of the townspeople gave way. It was not a very satisfactory finale to the situation but Doctor Jackson had done all he could. It is interesting to note that four years later the smallpox broke out again in the town and this time they decided that possibly they would be better off if they allowed Doctor Jackson to have his own way. At any rate, they sent a summons for the second time and he was allowed to carry on his work uninterrupted for several weeks. On this occasion the building was erected in what was called the Middle Division and here 1600 patients were given treatment. He also treated patients in many other communities in Massachusetts and New Hampshire and his practice proved to be lucrative.

There is little to record about the life of Doctor Jackson between the years 1773 and the opening of the Revolutionary War. We must assume that he led the ordinary life of a physician and surgeon, busy with his patients, who were growing numerous; he appears to have been at the beck and call of any number of communities which felt favorably toward smallpox inoculation and his sulky received good wear from that time on.

As the darkening clouds of the Revolution drew on he paid more frequent visits to Boston, where he consulted with his uncle and other recognized leaders of the patriot party. He was sufficiently far-sighted to see that if armed resistance came about in Boston, Portsmouth would be sure to follow suit in short order and he wanted to become allied with the cause of the patriots because he had seen enough during his years in London to realize that the road to peace was fast becoming closed. It was merely a matter of "marking time" and waiting for an overt act. And this came in March, 1770 in the Boston Massacre.

Sometime in 1773, he, himself, contracted the smallpox, his arduous duties in caring for others having weakened him to such an extent that he fell an easy prey to the disease. He had a room in the Essex Hospital and although he apparently recovered his former robust condition never returned. Doctor Josiah Bartlett of Kingston, one of the better known physicians of New Hampshire, attended him during his illness and a friendship sprung up between the two men that outlived the war. Doctor Bartlett was a delegate to the Continental Congress and signed the Declaration of Independence.

The news of the first open warfare at Lexington on April 19, 1775, was brought to Portsmouth by courier and upon learning of the seriousness of the situation, Doctor Jackson immediately left for the battlefield. Of course the battle was over upon his arrival but he was able to render some assistance to the wounded, making use of the ingenious device for removing a ball from a gunshot wound for which he had received honorable mention in London seventeen years before while attending the lectures at the Middlesex Hospital. The success that attended his efforts marked him among the surgeons of the day and when the next battle of the war took place, June 17, he was summoned to Charlestown by the leaders of the colonists and from that time on was a busy man.

Upon his return to Portsmouth after the Lexington fight he set about the work of organizing a company of artillery, that branch of the military service in which he felt particularly interested and in the following letter to Colonel Jeremiah Lee of Marblehead, temporary commander of the Continental forces in New England, formally offered his services in the cause of freedom.

Portsmouth, New Hampshire,
April 24, 1775.

To Colonel Jereh Lee:

Dear Sir:

Although this is no time for ceremony or compliments, yet so great is the pleasure I feel on your escape from the hands of violent and wicked men that I cannot help congratulating you. May God Almighty continue to be your safety and defence.

Could it be thought advisable for us to leave the seaports, I should long before this have been with you at the head of a company as good as ever twanged a bow. Inferior in military discipline to none, they are anxious and eager to be with you.

You well know how the art military has been my hobby horse for a long time past. I have vanity enough to think that the recommendation of an immediate perusal of the enclosed volume to the officers in the United army will not be thought impertinent at this time, considering the nature of our country; considering the natural genius of our men, no piece could be better adapted to our circumstances.

Our men are natural partisans. Witness the Rogers, Starks, Shepherd, etc. etc. Did they not in the last war take the very sentries from the walls of our enemies' Fortresses in the very heart of their Country? I cannot help thinking that some Horse might be employed to great advantage if our adversaries should ever venture abroad again. I have published some pieces in our papers but the *New Hampshire Gazette* can hardly be called a proper channel to convey one's ideas to the Publick. Might not some of the principal parts of the Partisan be given in manuscript to some of Our Officers? Dear Sir, I hope you will not construe this my humble opinion into impertinent dictation. We are all embarked in one cause, and from the ideas of all (though some may be simple) some things of consequence may be collected. With humble submission to the better judgement of every one, I conclude.

Your most obedient, most obliged
humble servant,
H. Jackson.

P.S. I have been in sulky more than once to pay you a visit but my friends have prevented me. When opportunity offers remember me to Mrs. Lee and family. As I apprehend there is not many books in the country, you will make what use of this you think proper, so that I may have it again hereafter.

Yours,
H. J.

To Colonel Jeremiah Lee.

The incident referred to in the opening paragraph of this letter concerns the miraculous escape of Colonel Lee, Colonel Azor Orne and Elbridge Gerry from seizure by the British regulars while at the "Black Horse Tavern" in Monotomy (Arlington) on the night of April 18, 1775. These three gentlemen, together with John Hancock and Samuel Adams, were members of the committees on Public Supplies and Public Safety which had been in session at the tavern since ten o'clock that morning. As night came on Hancock and Adams left for Lexington leaving Lee, Orne and Gerry to spend the night at the tavern.

Mr. Thomas Amory Lee of Topeka, Kansas, a descendant of Colonel Lee, in a very interesting brochure gives the following account of the incident:

> The three members from Marblehead (Lee, Orne and Gerry) had retired to rest without any apprehension of being exposed to seizure by an armed force, when they were suddenly aroused towards morning by Revere and shortly thereafter standing at the window in their night dresses, they saw the head of the column of regulars go by. When the centre of the column was opposite the tavern, they saw an officer and file of men defile to surround the house and search it. It was not until this moment that they deemed themselves in any danger. "Gerry in a flurry of excitement would have thrown the door open in their faces, in his effort to escape, had not the landlord hurried all three to the back."
>
> Back of the tavern was a cornfield. "Once outside Gerry tripped in the

stubble and called to Orne, 'stop, wait, I can't get up, I'm hurt.' This fall suggested to the others that perhaps they had best all lie low, and so they did until the danger from the British was over."

And so began the Revolution. Portsmouth, however, was not unprepared for the conflict. Her patriots had been storing up arms and ammunition against the day when it would be needed. Major John Sullivan was the acknowledged leader of the patriot party in New Hampshire and he had ardent supporters in Josiah Bartlett, William Whipple, Matthew Thornton, Tobias Lear, Pierce Long, Hall Jackson and others.

Poor Governor John Wentworth was at his wits' end. In a series of letters to Thomas W. Waldron he pours out his feelings.

> Peace, my dear friend, has by unwise men been driven out. They shut the door against its return. God forgive them. They know not what they do. Many of them, I verily believe, are innocently wicked. Its seems contradictory, but madness can no otherwise be explained, and our hemisphere threatens a hurricane. I've in vain strove almost to death to prevent it.

Governor Wentworth was very suspicious of Sullivan and he disliked Doctor Jackson for personal reasons. And Jackson was in a mood to reciprocate. Wentworth went to very great pains to slander and vilify Jackson upon every occasion. He did not like it one bit when Molly Wentworth married the doctor and now he was chagrined to find the latter espousing the patriot cause. Under date of February 8, 1775, he writes as follows to Waldron:

> There is no doubt S——— has his spies and none can be more ready for the office than H. J———; neither can there be one more deceptive or less to be relied upon. He skillfully attended the perilous hour lately in this house, but does not visit here. Even at that time when retired from his professional call he prefer'd the jolly, laughing servants' hall to the master's parlour in which I quietly acquiesced. Here his unmeaning invention triumphantly exercised obstretric anecdotes, surgery, military instruction, political phantoms, by turns entertain'd the circle and the next day his own storys he retail'd on the parade as news from the Province House. The evacuations of his mental dysentery the major can have no profit in but will tend to mislead him further. His expectations of dismission arise from his own consciousness, I am pursuaded.

Poor John Wentworth! But the end was in sight. Two years later he was packed off to England along with Andrew Pepperrell Sparhawk and Doctor Jackson's brother-in-law, Doctor Stephen Little, never to return.

Doctor Little was a thorn in the Jackson flesh. He was a rising young doctor in Portsmouth, whither he had come from the ancestral acres at Turkey Hill in West Newbury, Massachusetts, to study medicine in the office of Doctor Clement Jackson. He was accomplished, pleasing and genial and soon fell in love with Miss Sarah Jackson, sister of Doctor Hall Jackson. They were married in Portsmouth and lived there until 1777 when the decree of banishment was issued. Doctor Little then fled to England, leaving his young wife to look out for herself and their family of four small children. It is difficult, indeed, to understand the character of Doctor Little. He had been brought up on a farm in West Newbury. His father was a farmer of some wealth, a member of the general court and a gentleman of substance. Colonel

Moses Little was an uncle of the unfortunate young man while his mother, Madam Little, was a sister of General Jacob Bayley, so that Doctor Little had no loyalist influences at work in his family. He was socially ambitious and could not conceive of the colonies successfully combatting England. Considering the situation, he probably felt that his best chances of recognition from the Wentworths and other powerful royalists was to espouse their cause.

Upon his arrival in London he was given a commission as surgeon in the royal navy and was assigned to the ship *George*. He entered into the gay society of the British capital and while in London met John Singleton Copley, the celebrated painter who was himself a royalist and a recent arrival from New England. He sat for Copley not long after they met. He made the acquaintance of Chatham, Lord North, Lord Rockingham and many other British statesmen and for a time enjoyed the acquaintance of the Prince of Wales, afterwards King George the Fourth.

At the loss of the colonies, England grew bitter against the Tories, and many of them were placed in a difficult situation. Unable to return to America and friendless in England they knew not where to lay their heads. The promises of great landed estates in Canada were quickly forgotten by George the Third and for fifteen years or more Doctor Little lived in London in absolute retirement, ekeing out a frugal existence by means of an apothecary shop which he opened in Cleveland street in the Tottenham Court Road. His death occurred July 11, 1800 in a strange land far from his native New England hills. He had for many years been estranged from his wife and family whose sympathies were with the colonies and he died apparently forgotten. Even the place of his burial is not definitely known; but some years ago his grave was reported to have been found by a descendant visiting London. In a little English church in the suburbs of the great city is also said to have been placed a small wooden tablet telling whosoever pauses to read it that it was placed there "In memory of Stephen Little, physician and surgeon in the King's Navy and a faithful son of the Church." Madam Little, sister of Doctor Jackson, spent her last years with her daughter Madam Silas Pearson in Newbury where she lingered on until 1806.

This charming lady had drunk deeply from the cup of disappointment. Her marriage to Doctor Little had been decidedly unhappy and she was saved from absolute dependence upon her children only through the kindness of her distinguished brother.

After the break with England came, Doctor Jackson and his brother-in-law were none too friendly. While Doctor Jackson was busily engaged with his work in the army, Little was remaining in Portsmouth and taking his practice away from him. The only reference that we find to Doctor Little in anything written by Doctor Jackson is this cryptic sentence, "Cutter, Brackett and Little are eating up my patients daily." This was penned while serving in the army with no pay, long, hard hours and little or no recognition for the service that he was rendering and one may almost pardon the discouraging tone that is easily detected. It was no easy thing that Doctor Jackson did in relinquishing a large practice which brought him in a good income, only to see it acquired by his competitors back home, particularly when Doctor Little was one of the gentlemen who seemed to be getting the lion's share of it.

On June 17, 1775 occurred what we know as the Battle of Bunker Hill and when the news reached Portsmouth, Doctor Jackson packed a satchel with medicines, bandages, and surgical dressings and made ready to set out for Charlestown. Before he got ready to leave, however, a delegation arrived at his house and asked him to go to the battlefield and do what he could to relieve the suffering. He set out at once, reaching the scene of the fighting on the nineteenth, and there he found conditions very bad. The New Hampshire troops were neglected and without any care whatsoever. The arrival of Doctor Jackson was hailed with great delight and he immediately took charge of the hospital work. Throughout the night he labored by lantern light among the wounded men and when morning finally came he had performed forty-eight major operations including one amputation of a hip joint upon a man named Hutchinson. At this time there were nearly twenty five thousand troops in Boston and as expeditiously as possible the wounded were taken to hospital camps which had been established in Medford, Waltham and Watertown.

Doctor Jackson made his headquarters at the camp on Winter Hill until September, when he took charge of the hospital base at Medford where General Sullivan was stationed. He found associated with him, in the general hospital, Doctor Benjamin Church whom he had met some time before in Boston during the smallpox epidemic and with whom he was not on friendly terms.

Church apparently decided to make the best of a difficult situation, realizing that Jackson was far too important a person to ignore and knowing full well that he would necessarily be brought into close contact with him more or less during the war. He welcomed Doctor Jackson warmly, showed him the kindest attentions and allowed him to believe that he might rely upon his friendship and support in their association.

It began to appear to Doctor Jackson that he would be needed in camp for quite some time, possibly for several months. Neither Generals Sullivan nor Lee would think of his leaving for they realized that skilled surgeons were very scarce in the army and that the services of Doctor Jackson were invaluable. As a matter of fact he was at one time performing two thirds of the major operations in the army. The hospital camp at Medford had been enlarged and a majority of the surgical cases were being handled there. This necessitated his working day and night and it may be said without fear of prejudice that no one was more zealous in the cause for liberty or more willing to sacrifice than Hall Jackson.

In consideration of the services that he was rendering it was not too much for him to expect some remuneration. Day by day he saw his extensive private practice at home slipping away and passing into the hands of other practitioners, many of whom he knew to be inferior and unworthy. It was at this time that he wrote; "Cutter, Brackett and Little are eating up my patients daily."

Although he was not actually in need of money, his family in Portsmouth having sufficient for their needs, nevertheless he did not feel that he should be obliged to bear the entire burden of expense for his services for it was costing him 12s for his board and lodging and 7s more for the keep of his horse.

It was quite natural for him to look to the congress for some remuneration, if not in money then in the way of some sort of commission for up to that time he had received absolutely nothing to show for his services.

The question of the appointment of a chief surgeon for the entire Continental army had come up and many of the officers of the army had signified their desire to support Doctor Jackson. More than two hundred of them had signed a petition begging him to stay at Medford when he began to consider the possibility of returning to Portsmouth and he knew he could rely upon their support.

John Adams, the foremost patriot of them all, espoused the cause of Doctor Jackson and Elbridge Gerry and Doctor Josiah Bartlett were among his supporters. Moreover, Doctor Church whose influence over many of the members of Congress and also over General Washington, himself, was very great, came to Jackson and voluntarily offered his support; declaring at the same time that he would under no conditions accept the honor for himself.

With these promises from friends and associates, Doctor Jackson lingered on at Medford doing the work of an entire staff but without official authorization of any sort. As there appeared to be no opposition to his appointment as Chief Surgeon he confidently expected that the granting of his commission would be but the matter of a few days.

Late in July word reached him that Congress had made a decision regarding the appointment of a director and surgeon-general and to his dismay he found that the appointee was none other than Doctor Benjamin Church.

Doctor Church was a Massachusetts man. He had a pleasing personality and had made himself agreeable to some of the members of the Congress. At that time Congress was meeting in Philadelphia and Church went down to see how the affair was progressing. He was the person who had protested his fidelity to Doctor Jackson, and swore that he would not accept the honor for himself. Yet he lobbied in the halls of Congress for the honor which he did want but as time soon revealed for quite a different purpose.

What could Jackson do? If he packed up and left he would lay himself open to well-directed criticism from all sides. The only thing he could do was to stay and overlook what he felt had been a personal insult.

As a matter of fact Church was even then in communication with the enemy. He played up to the Congress in order to secure the position which they granted him and then it was apparently his aim to barter his services to the British. He realized that he would be more valuable to General Gage as the Surgeon-General of the entire army than as a mere army surgeon. Gage was not so slow to comprehend and Wentworth in New Hampshire might well have clapped his hands in glee. It meant the humiliation of Jackson and that looked good to the New Hampshire royal governor, whose turn, however, was coming.

At any rate, Church was created surgeon-general of the continental army. Washington acquiesced and the deed was done. Jackson remained at his post and the situation dragged on in this manner until the middle of October when suddenly on the morning of the twentieth, Church appeared in Medford with a number of waggons and after a violent quarrel with Jackson took almost all of the patients out of the hospital and carried them away to Cambridge, leaving the latter in practical disgrace.

This was a situation that would have aroused the ire of a saint. And Hall Jackson wore no halo. As a matter of fact he was very human, and the Jacksonian temper arose.

A threatened attack on Portsmouth served as a good excuse for the doctor's return and this he did, although Portsmouth at no time was in danger. The turn of events was a distinct shock to General Sullivan, who was an old friend of Jackson's and in vain did he plead with Washington and the Congress for a favorable decision for his fellow townsman.

About this time, Doctor Church's treachery, if, indeed, it may not be called treason, came to light. A letter which he had written to the enemy was found and he was immediately charged with a misdemeanor. Even to this day it is not definitely known whether Doctor Church was a plain fool or merely making believe. At any rate in his letter to Major Maurice Cane of the Sixth British regiment he gave out considerable information regarding the Continental troops but the information was greatly exaggerated. No one knows what Church's idea was. He grossly exaggerated the number of men in the Continental army; lied amazingly about their strength and his friends said he did it to throw the enemy off the track and help the colonial cause. Possibly that is the explanation; but it scarcely seemed necessary for the Surgeon-General of the Continental Army to be in correspondence with an officer of the enemy organization.

In any event, the letter caused consternation among the members of Congress and it spelled ruin for Doctor Church.

John Adams, afterwards president of the United States, wrote to his friend, James Warren:

Dear Sir:

The letter of Dr. Church's is the oddest thing imaginable. There are so many lies in it calculated to give the enemy an high idea of our Power and Importance, as well as so many truths tending to do us good that one knows not how to think him treacherous. Yet there are several strokes that cannot be accounted for at least by me without the supposition of Iniquity. In short I endeavour to suspend my judgement. Dont let us abandon him for a Traitor without certain evidence. But there is not so much deliberation in many others, or so much compassion. The Congress declined entering into any Discussion of the Evidence or any Determination concerning his Guilt in general they had a full conviction that it was so gross an Imprudence at least and was so suspicious that it became them to dismiss him from their service which they did instantly.

Yesterday they chose a successor, Dr. Morgan an eminent Surgeon of this city. We as usual had our men to propose, Dr. Hall Jackson and Dr. Forster.

But Dr. Forster's sufferings and services and Dr. Jackson's great fame, experience and merits were pleaded in vain.

John Adams

So once again, Doctor Jackson failed to secure the appointment which he sought and which many of his friends worked hard to secure for him. The Provincial Congress of New Hampshire took the whole matter almost as a personal insult and placed itself on record as favoring his appointment as evidenced by the following action:

> Voted: That it be and hereby is recommended to the President of this Congress to write to the Continental Congress and to General Washington (in the name of this Congress) a Recommendation of Doctor Hall Jackson to be Chief Surgeon of the Northern Division of the Continental Army or to appoint him in any other way according to his merit.
>
> November 11, 1775.

But that is all the good that it did. George Washington was pretty well in command of the situation and he did not care for Hall Jackson. Therefore, it was a foregone conclusion that Jackson would not get an appointment of any importance if Washington could prevent it.

The more one reads of Washington, the more one is inclined to doubt the sagacity of his judgment of men. In his choice of Doctor Church he showed a lack of judgment just as he did in the case of Benedict Arnold. In fact he had never shown any great admiration for New Englanders as a whole. Of course, there were some exceptions. Tobias Lear, his secretary, was a New Hampshire man and Colonel Moses Little of Newbury seems to have won his admiration and respect. But one is inclined to believe that he betrayed signs of jealousy at times for it must be remembered that John Adams and Samuel Adams and John Hancock were none too popular with the commander in chief and they were New Englanders. Hancock was paying suit to Doctor Jackson's cousin and the former was almost openly at swords' points with General Washington on several occasions. As a matter of fact after Washington became president, Hancock, at the time governor of Massachusetts, is said to have publicly snubbed him by declining to see him or receive him, pleading an attack of the gout as an excuse for keeping to his house.

And, moreover, New England, where the revolution had been born, had only fourteen representatives in the Continental Congress as compared with twenty from what is known today as the South or thirty-eight if one includes in the latter number Pennsylvania, New Jersey and Delaware which were almost sure to take sides with Virginia and the Southern planters rather than with the New England Yankees.

One can hardly blame Jackson for feeling bitter. He realized, just as many of his friends did, that his experience and training were equal to that of any surgeon in the army. He knew that next to gunshot wounds smallpox would be most prevalent among the soldiers and being no fool his common sense told him that there was no physician in America who could surpass him in his knowledge of this disease, and the public recognition that he had received for his genius in treating not only gunshot wounds but smallpox as well was proof enough of his genius and ability.

And then to have first a man like Church and then a comparatively unknown doctor such as Morgan capture the honor which he felt belonged to him was enough to cause him to lose interest in the whole project. It will be remembered that even the most ardent patriots sometimes came very near to losing hope and Jackson evidently was in the depths of despair when he penned the following to his friend Sullivan:

> I am utterly disgusted with some of these damnable patriots and their glorious cause of liberty which they are constantly flaunting in our faces. If liberty consists in killing the wounded, starving the sick and letting them languish in the hospitals

on bad salt pork for their only meat, I do not want to be much further employed in such a glorious cause.

Satisfied that Washington could not be persuaded to interest himself in Hall Jackson the New Hampshire assembly decided to take some action toward settling his status and recompensing him in a measure for his services.

Under date of October 27, 1775 he had written to the assembly stating clearly his situation in the following letter:

> You are well acquainted how suddenly I left my business to assist in the army and the difficulty it is to regain our Business when once got into other hands. I would have willingly returned home in ten days but both officers and surgeons would not hear to it and I have vanity enough to think I have been of some service to the Faculty as well as the soldiers in general. My not having any commission or authority from Our Congress has prevented my drawing any pay or provision as yet tho I have paid Mr. Bishop 12s per week myself and 7s per week for my Horse and indeed, Sr. to tell you the truth I am quite exhausted, no money and drove with my family out of town. I have a letter from John Langdon; he sais I shall be honourably provided for but must get from our Congress a Commission and allowance for past services. Yr kind attention to the merits will lay me under an obligation that I cannot easily repay.
>
> Your most humble servant
> Hall Jackson

And this letter had created something of a disturbance for immediately some of his townspeople jumped to the conclusion that he was tiring of the patriot cause. He had felt that after four months of service he was entitled to a little relaxation and so had returned to Portsmouth to make a start toward picking up the threads of his medical practice which had almost entirely disappeared. But the people would not have it so. The tongues of gossip began to wag and he was charged with being a deserter for leaving Boston.

It apparently mattered little to them how long he remained away from home or what hardships he suffered. This was a bit more than he could stand and he accordingly addressed the following letter to the Congress:

> To the Honorable President and Members of the New Hampshire Congress:
>
> Gentlemen:
>
> It having been insinuated that I have been absent from the army a considerable part of my time since my first entering, I beg leave humbly to inform the Congress that [I] arrived at the army 19th of June; I tarried until the 29th when not having a shift of cloathing I informed General Folsom that I purposed going home; he positively refused it and insisted upon my tarrying as the small pox was in the army and not one of his surgeons had had the disease; however on my promise to return in a few days he consented having first stopped my whole chirurgical aparatus for his son Adams who (as well as every other surgeon in the New Hampshire Regiment) was at that time even destitute of a needle to ligate a bleeding vessel.
>
> The Congress desired me when at Exeter to procure some proper person to mount some Field Pieces which I endeavoured to do but could not. I therefore took a drawing of every member of a Field Carriage when I arrived at Portsmouth. I employed myself every day from sunrising to sunsetting in mounting the Brass Field Pieces which are as well executed as any one on the continent. On the 13th of July I returned to the Army and have never been absent but eight days on command to recrute the Medical chest which I did at Salem and Portsmouth. I have now been home 15 days,

my whole time has been taken up in laying out fortifications at Kittery and Newcastle, in making cartridges, Cannisters and Port Fires for the field Pieces, in raising and exercising the Artillery Co., in hearing and administering to the innumerable complaints of the soldiers in regard to their Health.

The Honourable Congress will please to observe that I first perform my Business then ask for such a reward as they shall judge reasonable while others conscious of their own inabilities would not venture their performances on the same issue but insist upon large and remarkable stipends before they enter the service.

If there is the least objection in Congress to grant me the Commission I ask'd for I am so little anxious to continue in the service that I beg leave to retract my request.

I solemnly declare that I have never rec'd but 1s 4d and have not charged more than 20s since the 17th day of June tho my accounts for seven years past have never been less than £330 lawful money.

Hall Jackson

That letter created even more of a furore for it surely looked as though Doctor Jackson might drop out of the service altogether. Some of his enemies in the Congress said the service would suffer little if he did, that it was impossible to get along with him and that it would be a dangerous piece of business to give him even the authority that he requested, viz. the appointment as surgeon of the New Hampshire troops. But his friends rallied around and a committee was appointed to look into the entire matter. Hunking Wentworth, one of his friends, was chairman of this committee. On November 13, they reported, as follows:

Committee Hall, Portsmouth,

To the Honorable Congress for the Colony of New Hampshire. Gentlemen:

On the representation of the Delegates for this town (representing the Inhabitants in Congress) That a motion being made we should take under consideration a recompense for Doctor Hall Jackson's services as surgeon to the army at Head Quarters do in consequence thereby beg leave to inform the Congress That on the news arriving in this Town of the Battle of Charlestown in June last and being well informed that a gentleman of known abilities in surgery was much wanted did immediately apply to Doctor Jackson and intreated his setting off for the Camp without delay to assist any distressed officers or soldiers that might be unfortunately wounded. Whereupon he expressed a readiness and observed that he would at our request proceed without delay and trust to a future day for reward. We therefore take the liberty to Represent that Doctor Jackson sett off the 19th June on the purpose aforesaid and was continued in that service till 17th of October excepting three weeks at different times he was in this Town to visit his Family (in which time he was constantly employed in constructing Carriages and mounting sundry Field Pieces) for which services this Committee (with deference to the Honble Congress) adjudges that an allowance of £15 lawful money per month for all his services and expenses during the time aforesaid.

By order of the committee.

H. Wentworth, Chairman

Accordingly it was voted the next day

. . . that Doctor Hall Jackson be paid out of the Public Treasury of this Colony in full for his good services to this Colony from the 19 June to the 4th of August last the sum of L15 per month and that he receive a Commission from this Congress as Chief Surgeon of the New Hampshire troops in the Continental Army.

It is not difficult to realize how Doctor Jackson felt when he heard that the Congress had voted him recompense only to the 4th of August, and we can scarcely blame him for refusing the offer. It was more or less of a "slap in the face" and Doctor Jackson felt that if he could not get justice from the Congress he could at least retire from the scene with dignity and let the matter drop.

But of course those in the Congress who were interested in his welfare refused to allow the matter to take such a course and agitated for a reopening of the issue. It was not until the next January that action was taken, however. On the 20th of that month (January, 1776) the following motion was carried in the Congress:

> Voted. That Col. Walker, John McClary, Esquire and Samuel Sherburne, Esquire be a committee of this House to join a committee of the Honble Board to make report to this House what pay Doctor Hall Jackson ought to receive for his past services to this Colony and what establishment he shall have in future.

And the committee then asked Doctor Jackson to present his case in full, which he did in the following complete history of his service from the time he left for Cambridge in June, 1775.

> To the Honourable President and Representatives of the Colony of New Hampshire at Exeter, convened:
> The Memorial and Petition of Hall Jackson of Portsmouth, Surgeon, humbly sheweth
>
> That after the Battle of Bunker Hill he was persuaded by the committee at Portsmouth and others to give his assistance to the wounded troops of this colony with a full assurance that he should be faithfully and honorably paid therefor.
>
> That he was afterwards prevailed upon by the united requests of the officers to tarry at Headquarters during the campaign.
>
> That in consequence of a Petition by the late congress of this colony they granted him fifteen pounds per month for six weeks of the time only that he might obtain some compensation from the Continental Congress for the remaining part of his services; they also gave him a commission to be Surgeon General of the troops raised by this colony for the defense of America. Being disappointed in his expectations from the Continental Congress and hearing that an attack was expected at Piscataqua he returned home.
>
> That in a few days after his return the troops raised for the defence of the colony came down and General Sullivan also arrived. The enemy being hourly expected and no surgeon appointed and no apparatus prepared in case any number should be wounded notwithstanding there was more than 800 troops raised.
>
> That he received an order from General Sullivan to take the medical charge of said troops and accordingly prepared every article necessary in case of an attack.
>
> That he never entertained the least suspicion but that General Sullivan's authority was undeniable.
>
> That in ten days after your petitioner's appointment Colonel Wingate returned your petitioner to the Congress as surgeon to the said troops.
>
> That your petitioner also returned to the said Congress lists of all the sick by him attested as surgeon of the said troops and that as all your petitioner's orders and certificates as surgeon of the said troops were duly honored and as no person was appointed to superscede him he could but think that the late Congress and the Present Honble Court acquiesced in his appointment.
>
> That in ten days after the troops came down they became so sickly that your Petitioner could not himself attend them all as they were dispersed at Pierce's Island, Seavey's Island, New Castle and Portsmouth, the days very short and the weather very cold that he was obliged to engage Doctor Clement March Junior and his father Doctor Clement Jackson to assist him.

That on the 27th day of December Colonel Wingate's regiment was discharged and left sick in the hospital at Portsmouth, 10; in private houses, five; at Seavey's Island, three; at New Castle, three; at Rye, two besides those belonging to the forts and Artillery Co.

That your petitioner attended them until the 23d day of January when he himself was seized with the same fever that prevailed amongst the troops.

That during his sickness they were faithfully attended by his father Doctor Clement Jackson.

That your petitioner has actually been in the service of his country for seven months and has done no other business for all which he has never received a single farthing.

That his private Practice amounted annually to £350 lawful money and was he to be paid for what he has done during the said time for the troops as private practice it would amount to double the sum.

That if the Honble Court should agree that because there was some deficiency in the mode of his appointment that he ought not to receive anything his family must be greatly distressed as he has no way to provide for them but by his practice.

He humbly begs that the General Court would take the matter in consideration and grant such relief as they shall judge in their wisdom just and equitable.

Exeter, March 15, 1776

Hall Jackson

All these facts were attested by Major James Hackett and Captains George Turner, Titus Salter and Eliphalett Daniell, and the memorial had some effect upon the congress for one week later the following vote was passed:

Voted: That Doctor Hall Jackson be and hereby is appointed Surgeon of Our Troops at Piscataqua and that his wages be £7-10s per month.

It had taken five months, however, to get anything from the Congress in the way of a commission of authority, or recompense.

And so, in spite of the fact that Doctor Jackson was not exactly a poor man, he was forced to do something to increase his income. The war had interfered with commerce. In fact, there was little or no foreign trade left for the colonies except that which could be engaged in through smuggling with the French West Indies and Spain, and times were hard. It was difficult for people to pay their just debts and Hall Jackson, if nothing more, was kind-hearted. It was not in him to try to collect a bill from a patient if there was a doubt as to the ability of the patient to pay it. All this had an effect upon Doctor Jackson's living, for the decline in commerce naturally affected the valuation of securities and materially reduced the incomes of all men of means.

His espousal of the Colonial cause had alienated him from the rich royalist group and he had the humiliation of seeing his brother-in-law Doctor Little who leaned heavily towards the British cause, reap the harvest. And this fact, naturally, brought discord into the family. Hall Jackson was fond of Little. They had become friends while the latter was studying in the elder Jackson's office. Hall Jackson had rejoiced when he saw the romance budding between Doctor Little and his sister and their eventual marriage.

But now this friendship was becoming strained. He was disappointed that Little should turn against his family and take sides with the Wentworths whom he despised. He felt that Little was fawning upon these Tories, siding with them for what favors he might gain through their influence.

His sister, too, was in a dilemma. She loved her husband, quite naturally, and under any other circumstances probably would have remained loyal to him. But to leave America, her family and friends, to live in England among strangers who cared but little for the Colonials in any event was asking too much. If her husband persisted in his mad plan to bring disgrace upon himself he must share the retribution alone. She determined to remain in Portsmouth. Pleading had no effect. Little was an obstinate person. The family was noted for its determination and the more the Jacksons talked, the wider grew the breach.

In the early autumn of 1776, Doctor Jackson visited Newbury to see whether Doctor Little's father at Turkey Hill would be able to influence his son. The situation was becoming unbearable in Portsmouth. The patriots were demanding that the Tories be driven out of the country. General John Sullivan wrote to Washington:

> That infernal crew of Tories who have laughed at the congress, despised the friends to liberty, endeavored to prevent fortifying this harbor and strove to hurt the credit of the Continental money and are yet endeavoring it, walk the streets with impunity and will with a sneer tell the people in the streets that all our liberty poles will soon be converted into gallows. I must entreat Your Excellency to give some directions what to do with these persons as I am fully convinced that if an engagement was to happen they would with their own hands set fire to the town expecting a reward from the Ministry for such hellish service.

The senior Little was a patriot. His brother was that Colonel Moses Little, beloved of Washington, who rendered such meritorious service all during the war.

Doctor Jackson could not talk with Colonel Little because the latter was on Long Island with his regiment but he did discuss the entire situation with Doctor Little's father and then saw their entreaties cast to the four winds. The situation simmered along; in the meantime the colonials became more determined to be rid of these obnoxious persons and the Tories continued to flaunt the hopelessness of the cause of liberty in their faces. A situation like that cannot hope to last for very long and it is small wonder that there was not some bloodshed in the town. Some time during the next summer "Tory Row" became deserted for the legislature of New Hampshire passed the proscription act and the Wentworths, Pepperrells and Sparhawks left New Hampshire forever, taking Doctor Little with them. They never returned. Jail awaited anyone of them were they to set foot on American soil. Tradition of long standing has it that Doctor Little once got as far as the Isles of Shoals and that his wife rowed out to him at night, but this seems highly improbable.

Little's last years in London were penurious. A letter dated London, August 27, 1792 tells of his having been ill near eight months at Sheffield in Yorkshire and "no one of my acquaintances knew where I was for many months." "I was taken ill on the road" he continues, "with a nervous fever which lasted near fifty days, delirious the whole time without a soul that knew me. It left me many months in a state of idiotism and almost blind, it had such an effect on the optic nerve."

There is reason to believe that Little thought that some day he might return for in the same letter he says:

> My real intention was to have been in America as soon as possible on the

settlement of Doctor Greenleaf's affair . . . but when I come to read his letter which you enclosed I did not dare proceed, I should be liable to a prison immediately . . . I have taken an apothecary shop for twelve months and as much longer as I choose and am going to try business in London. I think the situation very good for business; if it should not do I can give it up at twelve months. If that should be the case I intend going to settle in Upper Canada as I have obtained a warrant from the Treasury for one thousand acres on condition of going out to settle it myself. The shop I have taken is in Cleaveland street, Tottenham Court Road.

He never got to Canada but died eight years later.

Doctor Jackson did more than discuss family affairs while on his visit to Newbury in 1776. He took the opportunity to call upon Deacon Silas Pearson at the Mills and talk over the conduct of the war. Deacon Pearson was an ardent patriot who narrowly missed going to the Continental Congress as a delegate. Pearson and Jackson had met before through Doctor Josiah Bartlett, a mutual friend and Pearson's son eventually married Mary Little, Jackson's neice and a daughter of the Tory doctor.

Deacon Pearson owned a fishing schooner, the *Jolly Robin* which had made many trips as far to the eastward as Penobscot Bay and not long after this she encountered a British frigate not far from the Isles of Shoals. Realizing that she was no match for the man o'war, having no guns, she beat a hasty retreat into Portsmouth. The inhabitants were alarmed and expected an attack. Doctor Jackson renewed his efforts towards furnishing ample protection for the town and in short order five matross companies under the command of Colonel Pierce Long were organized and stationed for the defence of Piscataqua harbor. Doctor Jackson was honored with the appointment as surgeon of this regiment which remained in Portsmouth until November 23 of that year when it was ordered by General Artemas Ward to reinforce the army at Fort Ticonderoga. The command was faithfully executed and Colonel Long's regiment was among those which under Ethan Allan captured the stronghold of northern New York.

The Ticonderoga expedition proved a busy one for Doctor Jackson for he found it necessary to use his greatest medical skill in combatting the smallpox scourge which raged among the soldiers for several months. In one way, it was a good thing that he had the opportunity to accompany Colonel Long for it took his mind off the subject that had been troubling and vexing him, that is, the lack of recognition that he felt should have been paid him by the Continental Congress and more particularly by General Washington whom he cordially detested. Had he remained in Portsmouth he might have tired of the patriot cause, although there is no probability that he would have shown open hostility as did his brother-in-law. In Doctor Jackson's case, it was merely that he felt a keen disappointment in not getting what he expected in the way of honors. He naturally felt that with his European training and the success that had been his so early in his career particularly as it was displayed in Boston in the smallpox scourge of 1764, he ought to have been recognized as outstanding among the medical men of his day. And in this he was not without sympathizers for he had no more valiant supporters than General Sullivan and John Adams to say nothing of Colonel Lee of Marblehead who was ready to go to any extremes to aid him.

Despite all this, he was essentially at heart a patriot and he soon submerged his feelings in the vast amount of work that he found to do among his men on the long march through New Hampshire and Vermont. It is not a vain thing to say that he was responsible for much of the success of the expedition for he kept the men for the most part fit to fight and this they did in a manner that surprised the British and increased their respect for the Colonials.

There is little of moment to record about Doctor Jackson during this expedition beyond what has been said of his work as a physician and surgeon. He apparently did not attempt to impress his opinions upon any of his superiors probably because he had things pretty much his own way in his own particular field.

The only word we have of him during the expedition is in a letter to his wife in which he says:

> I have now the pleasure to inform you that we arrived here on the 19th in good spirits though we had a very fatiguing march being obliged to go round by Skenesboro as there were not boats at Lake George to bring us over. Out of the four companies we had 12 deserters from us on the road and the most of those were old deserters from the regulars. We held a court martial at every other stage and gave several of the unruly ones Moses' law, i.e. 39 and they now begin to behave very well, being kept under as strict discipline as any of the regulars. There is the greatest plenty of fresh and salt provisions here, the men have as much as they can use, a jill of rum and as much spruce beer as they can drink every day so they have no occasion to drink Lake water it being reckoned very unhealthy.
>
> There has been a French gentleman here lately from Canada who has put our men in great spirits by assuring us that the greatest part of the Canadians would join us.

He came back to Portsmouth the next year and shared with the other officers on the expedition the praises of the citizenry. The people were too exultant over the victories that the Colonial army had won to take to heart any of the personal quarrels of Doctor Jackson and he showed himself to be too much of a patriot to continue to regale the public with them. Yet he could not resist the temptation to write occasionally for the newspapers, the channel for airing one's views that is resorted to by many even in this day.

He was beginning to lose a little of the impetuosity of youth for he was now approaching middle age and he had the family troubles that confront every man to deal with. The forced flight of his brother-in-law Doctor Little had left his sister dependent upon him and he found it necessary to earn a living sufficient to support two families.

And so the years passed and the war with them. From a practically hopeless beginning the colonies at last found themselves an independent nation, fully as surprised at their victory as was England in her defeat. At the outbreak of the war no one dreamed of founding a politically independent nation. The most that was expected was some sort of a dominion such as that enjoyed in Canada today where a certain amount of freedom from restraint might be had, more essentially as it pertained to free trade with other nations of the world and a fair assumption of war debts by the Mother Country. As a matter of fact the legislature of

New Hampshire shrank from declaring its political freedom early in the struggle and without doubt some of the other colonies felt the same way. It seemed foolhardy to imagine that a comparative handful of poorly trained soldiers could hope to contend successfully with the trained troops of England or prove anywhere near a match with the mother country in financing a war, the colonies being utterly without credit in any European country at the start.

Washington, himself, said:

> The unprepared state of the colonies on the commencement of the war and the almost total want of everything necessary to carry it on are the true sources from whence all our Difficulties have proceeded. The fact, however, furnishes a most striking proof of the weakness or wickedness of those who charge them with an original intention of withdrawing from the Government of Great Britain and erecting an Independent Empire. Had such a scheme been formed the most warlike preparations would have been necessary to effect it.

In justice to France it must be admitted that her age-old hatred of England proved to be a Godsend to the American colonies for had it not been for her wild lust for revenge upon Britain it is extremely doubtful if Franklin and Adams could have succeeded in getting any sort of recognition or assistance from her. Let no one beguile himself into believing that France was actuated by any love for the colonists. This was proved in the alacrity with which she was willing to spring to arms against them a few years later after the signing of the peace treaty with England when she felt that the poor, struggling colonies ought to be willing to risk another war with England to aid her in her dream of conquest which was to drench Europe in blood a decade later at the behest of Napoleon Bonaparte.

However, when peace came at last and the colonists finally realized that they were an independent nation, masters of their own destiny, they took to politics with a startling seriousness. Partisanship ran strong among the men of Portsmouth. Doctor Jackson was a Federalist as were the majority of the aristocratic class of that day. As the friend and admirer of John Adams he could have been little else. Moreover, he had absorbed the paternalistic ideas of the class in which he moved and he showed quite openly at times a growing resentment at the rising tide of democracy that seemed to be instilled in the laboring class and which was to cause many a riot and mob scene later on.

The citizens of the new republic were quick to take sides on any question whether they knew what it was about or not and one glaring example of this fact is revealed in the scene that took place in Portsmouth in July, 1795, when the news of Jay's treaty reached the town. John Jay, minister of the United States to England, had promulgated a treaty with that nation which forbade the trading of American vessels of over seventy tons with any of the British colonial ports or islands. The people felt that it was far from acceptable and for miles around they milled about the town square in Portsmouth discussing the terms which they felt spelled disaster for the country and denouncing their old enemy, England. Feeling rose to a fever heat and finally a meeting was called. Posters bearing the following message were put up about the town:

THE CRISIS—TO THE CITIZENS OF PORTSMOUTH

This (citizens of every description) is the crisis of your fate. Tomorrow you are warned to assemble at the state house on the most momentous occasion of your lives. Your all is at stake. The senate has bargained away your blood-bought privileges for less than a mess of pottage. That perfidious, corrupting and corrupt nation whom you vanquished with your sword are now endeavouring to vanquish you with their usual but alas too successful weapon—British gold. Your only remaining hope is in the President. Assemble then to a man. Shut up your shops and warehouses, let all business cease. Repair to the State House; remonstrate with coolness but spirit against his signing a treaty which will be the death warrant of your trade and entail beggary upon us and our posterity forever. If you regard yourselves, your children and above all the honor of your country assemble at the sound of the bells.

Doctor Jackson came to the defense of Jay, feeling that the situation could not be as bad as it was pictured and so became the object of the mob. The afternoon before the gathering at the state house he had been in Rye and chanced to find himself in the midst of a discussion regarding the evils and virtues of the treaty. A half-witted fellow in the crowd sidled up to the doctor and told him that Rye had "been sold for British gold," to which the latter replied in the following bit of doggerel:

If Rye to Great Britain was really sold
As we by some great men are seriously told
Great Britain, not Rye, was ill-treated.
For if in fulfilling the known maxim of trade
Any gold for such a poor purchase was paid
Great Britain was confoundedly cheated.

Most of the crowd took the little bit of bantering in the spirit in which it was meant but the story got about that the doctor was leaning too heavily towards Britain and on the night following the meeting in the state house an angry crowd of men and boys, some of them from Rye but the majority from Portsmouth collected and, marching to Doctor Jackson's house at the corner of Washington and Court Streets, threw stones in at his windows, broke down his fence, frightened his family nearly to death and went away with clapboards and shingles as evidence of a good night's work. They also serenaded the doctor and his family with songs of a rather ribald nature. The incident was soon forgotten, however, and the doctor was able to laugh at it in after years. It represented the growing spirit of democracy and proved that the people were determined to have a hand in the affairs of state.

The death of Doctor Jackson came as a surprise to the townspeople for it had not been suspected that his condition was so grave. On the morning of September 25, 1797, he started out in his sulky to visit some patients and in some manner the horse became frightened and started to run away. As he attempted to bring the animal to a stop, the carriage overturned, throwing the doctor heavily to the ground, fracturing several ribs. He was taken to his home where he lingered until the twenty-eighth; the immediate cause of his death being pneumonia. Mr. Adams in his "Annals of Portsmouth" says:

> On the 28th of September died Doctor Hall Jackson after a short illness in the 58th year of his age. In visiting some patients his sulkey was overset whereby several ribs were fractured and a fever ensued which terminated his life. Doctor Jackson received the first rudiments of

his education in the public schools here. . . . As a physician he was skilfull, as a surgeon eminent. No operation of importance was performed for many miles around without consulting him and seldom without his aid. He had great experience with small pox and many hospitals which he established for inoculating with that disorder were committed to his care and he was remarkably successful in conducting his patients safely through the disease. In the obstetric art he obtained high reputation and was frequently applied to for advice and assistance in difficult cases by persons who did not generally employ him. His sprightly talents, lively imagination and social habits rendered him an agreeable companion, facetious and pleasant in conversation, his friends enjoyed in his company that feast of reason with the flow of wit and the several societies of which he was a member found their entertainment greatly heightened by his presence.

This sad event proved a great loss to the community for Doctor Jackson was accounted one of the town's most important citizens. Few visitors of note failed to call upon him when in Portsmouth, and his hospitality was proverbial. We may recall the visit of the French fleet in October, 1782 when it anchored in Portsmouth harbor and the officers were hospitably entertained at the William Pitt, formerly the Earl of Halifax Tavern. Lafayette came on from Providence and John Hancock from Boston and after a sumptuous dinner at the public house they were guests of Doctor Jackson at his house. Washington came to Portsmouth in 1789 but Doctor Jackson absented himself from the festivities, having no particularly warm regard for the president.

He seems to have had a passionate desire to write for the newspapers upon various topics and as Mr. Adams in his Annals says he proved a jolly companion. But he was not sufficiently attractive to his house servant, Pomp, apparently to prevent him from running away, as we learn from the following:

> Ran away from his master on Sunday night Sept. 8, a negro man named Pomp; had on when he went away and carried with him one pair of buff coloured leather breeches, white linen and checked shirts, two coats and waistcoats one made of white fustian and another of light cloth with a light great coat and sundry other articles. He is a straight limbed fellow about 5 feet 10 inches high, speaks bad English; has lost two lower foreteeth and was a house negro. Whoever shall take up said negro and return him to his master shall receive as a reward 20 Spanish milled dollars.
>
> Hall Jackson

The doctor's death precipitated a family quarrel between his widow and daughter on the one side and his sister and her children on the other, for it was found upon reading his will that he had left what was supposed to be a legacy for founding a female academy on the old Hall farm in Greenland (which he had inherited from his father) to his sister, and the charge was immediately made that Madam Little had used undue influence toward her brother. Mrs. Symmes, the doctor's daughter, seems to have been the trouble-maker in this instance. Evidently it was her idea that the female academy be founded and one wonders whether it was because of her real interest in education for her sex or because she did not want her aunt to share in her father's estate. One is inclined toward the latter view, particularly in the realization that one day the Littles would be her own heirs because her own daughter and only child had not survived.

The old Hall farm where Doctor Jackson is said to have planned the academy was bounded on the west by the bay, on the south by land of John Pearse, Esquire, and on the north and east by land of James Pickering.

There is some ground for believing that the doctor did have in mind founding a medical school in Greenland and probably had his brother-in-law remained loyal to the patriot cause and been allowed to stay in this country so that he could have supported his wife, the plan might have materialized. As it was, the doctor could not see his sister suffer while the money that might be hers was to be spent for a school, commendable project that it would be. Apparently the doctor changed his will the day before his death, according to several depositions offered at the court proceedings a few years later.

Doctor John Jackson, who attended Doctor Hall Jackson in his last illness, testified that he "was present when he (Doctor Hall Jackson) proposed altering his will by leaving out a clause which provided for the establishment of an academy in Greenland and to substitute in lieu thereof provision for his sister and her children."

"He expressed a contempt," the Doctor goes on further to say, "of the idea of bestowing his money on what might perhaps be an useless institution and desired that his own family should enjoy his estate."

It is extremely difficult to believe that Doctor Jackson would ever while in his right mind feel that a female academy would be a "useless institution" as Doctor John Jackson intimates; but it is highly probable that he reconsidered his earlier plan and favored his sister. As a matter of fact the situation for the doctor's widow was not as bad as it appeared for she possessed independent means gained from her first marriage to Lieut. Daniel Wentworth. Moreover, the last paragraph of the will reads: "All the rest and residue of my real estate, the interest arising from my public and private securities with all the remainder of my personal estate, I give and bequeath to my wife Mary, so long as she shall remain my widow." The public securities as listed in the inventory amounted to nearly $3,665, while the value of the notes on hand, some of which were, however, of no account, was nearly $4,753, which, together with the mansion house and the Hall farm made a fairly comfortable estate.

Although he was only fifty-eight years of age at the time of his death, Doctor Jackson closed his life filled with honors.

He was an honorary member of the Massachusetts Medical Society and a Charter member of the New Hampshire Medical Society. Four years before his death he went to Cambridge to receive the degree of Medicus Doctor from Harvard.

In Masonry he was very prominent. He was a member of old Saint John's lodge in Portsmouth, having received his degrees in 1760. He served as Master of this lodge from 1769 to and including 1791. He was chairman of the convention that organized the grand lodge of New Hampshire on July 8, 1789, which elected General John Sullivan as grand master. As deputy grand master he signed the first charter granted by the grand lodge. On October 27, 1790, Hall Jackson was elected grand master and served until his death when he was succeeded by Nathaniel Adams, author of "Adams' Annals."

His grave is in the old North cemetery, beside that of his father, Doctor Clement Jackson.

DR. GUILLOTIN'S IDEA*

By JAMES HENDRIE LLOYD, M.D.

PHILADELPHIA

It would be impossible to name any other physician who has won fame by such a short cut as that which distinguishes the case of Dr. Joseph Ignatius Guillotin. His fame was the outgrowth of the French Revolution; a crisis in history which made, as well as un-made, not a few reputations. For the medical profession the case is unique; there is nothing like it in the pages of medical history, unless we admit as a rival Dr. Gatling who invented a famous gun. But the two cases are hardly alike.

Dr. Guillotin was born in 1738, and became a respectable practitioner in Paris. There is no record of scientific work by him, except that the *Index Catalogue* gives him credit for three papers, with Latin titles, which were published long before the Revolution. These papers are buried in forgotten archives. Probably the best approach to him is by way of the Pre-Revolutionary writers, under whose influence he seems to have entered upon the historic scene.

The Revolution had been preparing for many years, during which there had arisen a miscellaneous assortment of philosophers, encyclopedists, idealists and dreamers, whose object was not only to reform France, but also to reconstruct the world. Voltaire was a sceptic in revolt. Montesquieu wrote his Spirit of the Laws, in which he dissected the body politic with the pen of a scientist. Diderot founded the Encyclopedia, in the pages of which the apostles of progress had found free voice. D'Alembert, a student and mathematician, helped to undermine still further a decaying tyranny. There were others too numerous to name; sentimentalists in search of a Utopia. But the most potent voice was that of Rousseau, who proclaimed his Social Contract and his State of Nature; things which had never existed and never can exist. All these influences doubtless helped to shape the career of Dr. Guillotin, who seems to have been merely a mild enthusiast, not a wild fanatic; in no sense a dangerous man, like Marat or Robespierre.

In the Revolution we see examples of the follies and tragedies of dreamers and uplifters, blind to the possible disasters that may come of the attempt to realize their foolish dreams. As Lowell has said, "To dwell in unrealities is the doom of the sentimentalists."[1] But it was the doom of Dr. Guillotin to see his dream turned into a ghastly reality.

When the Revolution began, Dr. Guillotin showed himself to be something of a politician as well as a physician. He was elected a member of the States-General, which later became the National Assembly, organized to reform the state. It was an era of hope, but it was also a crisis. The people were incited to demand and to expect a relief from the oppressions of a state that had grown intolerable. In a popular demonstration in Paris Dr. Guillotin was once carried shoulderhigh by the crowd, and he was elected Assistant Secretary of the Third Estate. The doctor must have felt that his time had come to launch out as a humanitarian, for that was his ambition. He was a philanthropist, intent upon taking his part in a movement for the benefit of mankind. He did not, and could not, foresee that "he was doomed by a satiric destiny to the strangest immortal glory that ever kept obscure mortal from his resting place, the bosom of oblivion."[2]

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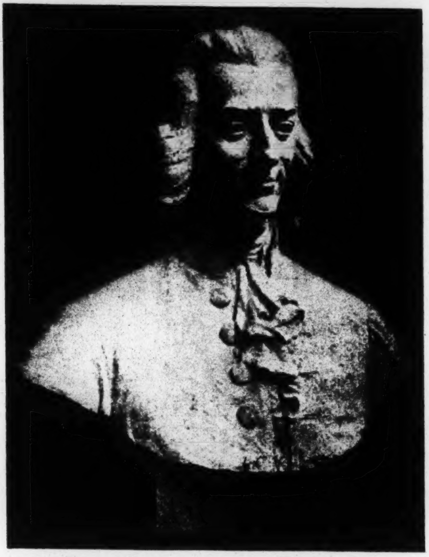
Fig. 1. Joseph Ignatius Guillotin.

When Dr. Guillotin, in 1789, took his place in what was to become the National Assembly at Versailles, his first thought was to promote hygiene.[3] He was concerned about the ventilation of the hall, which was overcrowded and stuffy, and he suggested remedies. He also observed that the seats were hard and uncomfortable, so he proposed that the members should have cushions. His proposals were received with high favor. It was he who proposed the celebrated meeting in the Tennis Court, where the members took the oath which inaugurated the Revolution. He served on a special deputation to the king; and he once carried to Versailles the news of an alarming riot in Paris; an event which, it would seem, might have shaken his faith a little in the proletariat. But Dr. Guillotin was reserved for greater things than these, and in due time he showed what was in his mind.

As has been said, Dr. Guillotin was well-meaning and kind-hearted, and he had long been meditating the subject of capital punishment. It was a subject well worth attention, for like so much else in France it needed reform. In the Old Regime a discrimination had been made between the nobility and the commons. Aristocrats had been beheaded with the sword, but people of the lower orders had been hanged. Dr. Guillotin would abolish all this, and reduce capital punishment to a democratic level. In his meditations he somehow got hold of the idea of a machine for cutting off heads. It was to be a contribution to the brotherhood of man. The distinction between nobles and commoners was no longer to be allowed. All were to have their heads lopped off alike.

The idea of such a machine was not entirely original with Dr. Guillotin. It is said that something like it had been formerly used in Italy; also in England; and in Scotland, where they had what was called the "Scotch Maiden."[4] It is even said that an axe, dating from the Stone Age, has been found (in 1865) near Vervins in France. It is of flint, and worked like a machine, and had been used by the ancient Gauls. It is an odd coincidence that it should have been found in France.

In the elaboration of his idea Dr. Guillotin seems to have spent much time, and shown not a little ingenuity. We are told that the house is still pointed out in Paris in which he is said (but without any given evidence) to have made his novel experiments in vivisection, and tried the little model of his machine on rats.[5] He even consulted Sanson, the executioner of Paris, as to the best method of cutting off peoples' heads; and Sanson wrote him an interesting memorial on the subject, which Dr. Guillotin afterwards took to the Assembly and read during the debate. This memorial has recently been reproduced by Lenotre, and presents the opinions of an expert in decapitation.[6] For success with the sword (the old-fashioned way) it was necessary for the victim to be as cool and firm as the executioner. If either lost his nerve, the execution might be bungled; and instances occurred of very horrible scenes on the scaffold. These embarrassments would evidently be avoided by Dr. Guillotin's machine.[7]

Dr. Guillotin presented his plan to the National Assembly in a debate on the Reform of the Penal Code. His address was long-winded, for he had the subject much at heart and strove to impress his hearers with the advantages of his machine and the benevolence of his own motives. He assured them that it would "take off a head in a twinkling, and the victim would feel nothing but a sense of refreshing coolness." Whereat the members all laughed; many of whom were destined in time to test the accuracy of the doctor's prognosis. He even told the members in all seriousness, "We cannot make too much haste, gentlemen, to allow the nation to enjoy this advantage." Like many of our reformers, Dr. Guillotin seems to have been without a saving sense of humor. He was even criticized for lack of good taste, as shown in the stark realism with which he described the working of his machine to that august Assembly. But what has good taste to do in the schemes of up-lifters?

Although first proposed in 1789, the invention was only accepted, after some opposition, on May 3, 1791. Its construction was intrusted later to Dr. Antoine Louis, secretary of the Academy of Surgery, who was surgeon and bleeder to the king. Dr. Louis made the infernal thing, or had it made, according to Dr. Guillotin's suggestions, and tested it on sheep; or according to another account, the tests were made by Sanson, the executioner, on corpses at the hospital of the Bicêtre.

The story goes that when Dr. Louis found that it worked well, he showed it to King Louis XVI, who had a taste for mechanics, and made a good suggestion. For when his Majesty observed that the blade was set horizontally, he advised that it should be set obliquely, which was accordingly done; and thus it was set as though by his own hand, when in less than a year it cut off the King's head.[8] Such are some of the legends in which this history abounds.

Dr. Louis wrote a long report to the Assembly on the subject of the proposed implement, in which report he did not even mention Dr. Guillotin's name; an injustice which history has not been slow to resent.[9] It proves, however, that it was not Dr. Guillotin but Dr. Louis who was the real agent in the final setting up of the machine.

It was at first called the *Louison*, or *Louisette*, after Dr. Louis, much to his distress. But already a popular song had appeared, in a journal called *Les Actes des Apôtres*, in which the right name was forever given to the *Guillotine*, the feminine form of Dr. Guillotin's name, as if it were his daughter; and thus Dr. Guillotin stepped into his immortal fame.

The first victim was a street robber named Pelletier, who was publicly beheaded on it. He had been kept waiting for two months, until the new machine was ready for him. An enormous crowd witnessed the execution, but the spectators were greatly disappointed. It was much too quick; they preferred the old method by hanging, when there was something to see. But it was not long in winning popular favor; and Lamartine says that in 1794, toward the close of the worst of the Revolution, "The guillotine appeared to be the only institution in France."[10]

Its victims, in batches sometimes of thirty or forty and once of as many as seventy in a day, were trundled on carts through the streets of Paris from the prison to the scaffold amidst the jeers of a sanguinary populace.

There is a scientific phase of this subject which is better worth a brief discussion here than the horrors of the Reign of Terror. There seems to have been some early speculation as to the physiological effects; a subject of some interest today, when we are hearing about decerebrate rigidity, as seen in cats, after transverse sections of the brain stem; which sections, however, are at a higher level than the lesion made by the guillotine.[11] There is quite a bibliography on the subject of decapitation, especially as to the retention of consciousness. But it seems to have been largely speculation, and not based on accurate observation, for such observation must have been difficult, if not impossible, after these public executions.[12] The most noteworthy paper is by Dujardin-Beaumetz and Evrard, which is devoted to both a historical and a physiological discussion of the punishment by the guillotine.[13] From this paper it would appear that there had been some dispute about the relative importance of the parts played by Dr. Guillotin and Dr. Louis, and we may conclude that some fables have arisen about the rôle of each of them. But the paper deals largely with the results of observations made by the authors on the body of a decapitated criminal. Their tests and observations were accurate, and their conclusion was that consciousness was instantaneously lost at the stroke of the axe.

The following is an example of the romances of the times. It was reported and currently believed that when Charlotte Corday was beheaded, the assistant executioner held up her head to the crowd and struck it with his fist, whereupon the head blushed. This was supposed to prove that consciousness was retained. But even if the story be true, this effect may have been merely a vasomotor reaction. I recall the case of a woman who had a partially transverse lesion, caused by trauma, high in the cervical region of the spinal cord, in whom there was sweating above the level of the lesion and dry skin below. Whether this throws any light on the alleged case of Charlotte Corday, may be a question.[14] Anyhow, the fact that some scientific interest was aroused by these horrors is only another phenomenon of what may be called the psychology of the French Revolution.

This great cataclysm, which began as an attempt at a much needed reform, became in time a pandemic fury. It is to be classed among the abnormal phenomena of history, where were displayed the excesses of morons and fanatics, who lost their heads in more senses than one.

There has been some discussion about the total number of deaths by the guillotine during the Revolution. One estimate places it at 2000, but another fixes it at double that figure. Whereupon Carlyle observes, with his sardonic humor, that the latter number is only a fraction of the number of men killed in the Seven Years War; a war in which Frederick the Great managed to wrest a small patch of territory from Austria. Carlyle seemed to think that the record as a man-killer was against the king as compared with the Republic.[15] There must be not a few discrepancies in these various estimates. Lamartine says that at Bordeaux alone there were 750 executions. The scenes at Lyons were even worse. Lenotre gives 2831 as the number of those beheaded in Paris within a little more than two years.

A recent author asserts that the guillotine, because of its machine-like precision, really prevented many horrible deaths by the mob, which would otherwise have occurred. Hence he calls Dr. Guillotin a "benefactor to humanity."[16]

He took no part in the atrocities of Robespierre, Danton and the Revolutionary Tribunal; but lived retired and obscure in Paris, esteemed by his friends and overlooked by the Terror. The story that he was a victim of his own machine was not true; he died in his bed in 1814. An eulogy was pronounced on him by a medical colleague, who glided discreetly over the sad celebrity which Dr. Guillotin had acquired from his unlucky invention; a device which had originated in a philanthropic motion, and to which the vulgar had given his name.[17]

The College of Physicians has a holograph letter of Dr. Guillotin's which possibly throws a ray of light on the closing days of his career. It is dated in Paris, June 6, 1806, and is addressed to the Counsellor of State. In it the writer asks for an appointment, and says he has to speak of "an affair which interests him much."[18] We can only wonder what this affair was, and whether it had to do with an effort to rescue his name from its ignominy. He had seen his country pass through an appalling crisis, which had brought to him disillusion. Nobody deplored more bitterly than Dr. Guillotin the fatal use that had been made of his invention.[19] The unhappy man is said to have made vain attempts during the later years of his life to dissociate his name from the bloody axe. It was there to stay. As Carlyle says, "His name is like to outlive Caesar's."

REFERENCES

1. LOWELL, J. R. Among my Books; Chapter on "Rousseau and the Sentimentalists," p. 362.
2. CARLYLE, T. The French Revolution. London, Chapman and Hall, 1: 125.
3. McCARTHY, J. H. The French Revolution. N. Y., Harper, 1898, 1: 558.
4. See the Encyclopaedia Britannica, art. "Guillotine," for historical notes on this subject.
5. WARE, J. N. How to Find Old Paris. N. Y., McBride, 1927, pp. 28, 29.
6. HAGGARD, A. C. P. Louis XVI and Marie Antoinette. N. Y., Appleton, 1: Chap. XXXV.
7. *Quarterly Review*, London, p. 235, Dec., 1843, contains a historical paper on this whole subject, based on French

sources, which reproduced Sanson's paper at a later period than that indicated in the above account.

8. McCarthy, J. H. *Op. cit.*, 2: 405.
9. Lenotre, G. La Guillotine. Paris, Perrin, 1907, p. 224.
10. Lamartine. History of the Girondists. Bohn's Standard Lib., 3: 291.
11. Hensey, J. C., Ranson, S. W., and McNatten, R. F. The rôle of the hypothalamus and mesencephalon in locomotion. *Arch. Neurol. & Psychiat.* 23: 1, 1930.
12. For a brief discussion of this subject see a biographical sketch of Dr. Guillotin, *Gaz-Med. de Paris*, 1850, 3. s., v. 819 and 833.
13. Dujardin-Beaumetz and Evrard. Note Historique et physiologique sur le supplice de la guillotine. *Ann. d'Hygiene*, Paris, 2. s., 23: 498; 24: 147, 1870.
14. On this subject see a paper entitled Complete Transactions of the Spinal Cord at Different Levels; their effect on Sweating, by Richter, C. P. and Shaw, M. D. *Arch. Neurol. & Psychiat.*, 24: 1107, 1930. These experiments were made on cats.
15. Carlyle, T. The French Revolution, Vol. III, p. 264.
16. Haggard, *op. cit.*, Vol. I, p. 331.
17. Lenotre, *op. cit.*, pp. 216–217, footnote.
18. The letter is as follows: Paris 6 Juin 1806. A Monsieur Neal, Counseiller d'Etat. Je vous prie d'avoir la bonte de m'accorder un moment d'audience et de me faire d'avoir la jour et l'heure auxquel vous voudrez bien me recevoir. J'en serai tres reconnaissant. J'ai a vous parler d'une affaire que m'interesse beaucoup. Salut et respect, Guillotin, rue neuve St. Roch. No. 37.
19. Thiers, L. A. History of the French Revolution. Phila., Lippincott, 1894, 2: 92, footnote.

THE PRACTICE OF MEDICINE IN PHILADELPHIA IN THE EIGHTEENTH CENTURY*

By FRANCIS R. PACKARD, M.D.

PHILADELPHIA

WE have met tonight to honor the memory of one who did much not only for the Jefferson Medical College and Hospital but also for the elevation of the standard of medical education and practice throughout the United States. In doing so he was carrying on traditions deeply rooted in the past medical history of Philadelphia. Tonight I propose to talk about the medical profession in Philadelphia in the Colonial Period and I hope to show that it was largely composed of men who were not only well trained in their profession, but were also gentlemen of culture and refinement, and that it was owing to the high ideals and cultivation of these early practitioners that the long-continued preeminence of Philadelphia as a medical center was due. In the course of my remarks it will be necessary for me to refer somewhat frequently to two of Philadelphia's medical institutions which still flourish, the Pennsylvania Hospital and the medical school of the University of Pennsylvania. Your great College was not founded until 1824 but the men who established it were thoroughly imbued with the ideals and traditions of their predecessors, and from its beginning to the present day the Jefferson Medical College has preserved and cultivated these standards so well exemplified in the lifework of William Potter.

Let us now glance at the early history of medicine in Philadelphia and see what we can glean about some of the men who laid the foundations for the development of its subsequent glory.

The City of Philadelphia did not offer a promising field to physicians in its early years if we judge by two statements which were written by persons in a position to know. Gabriel Thomas in his "Description of Pennsylvania," written in 1697 says: "Of lawyers and doctors I shall say nothing, because the country is very peaceable and healthy," and Charles Gordon wrote to his brother, Dr. John Gordon, in 1685:

> If you desire to come hither yourself, you may come as a Planter, or a Merchant, but as a Doctor of Medicine I cannot advise you, for I hear of no diseases here to cure but some Agues, and cutted legs and fingers, and there is no lack of empirics for those already; I confess you could do more than any yet in America, being versed both in Chirurgery and Pharmacie, for here are abundance of curious herbs, shrubs, and trees, and no doubt medicinal ones for making of drugs, but there is little or no employment this way.

Nevertheless physicians did come and settle in Philadelphia. When William Penn arrived in the city of which he was the founder in 1682, he was accompanied by three physicians, Thomas Lloyd, Thomas Wynne and Griffith Owen. Of these the first two did not practice their profession but went into public life, Lloyd becoming Deputy Governor of the Province and Wynne Speaker of the first Provincial Assembly. Dr. Griffith Owen practiced medicine until his death at the age of seventy, in 1717. His practice kept pace with the growth of the city. He was greatly respected and loved. William Penn wrote of him in a letter as "tender Griffith Owen who both sees and feels." He is credited by Thomas Story with performing the first recorded amputation in the Province. While a salute was being fired in William Penn's honor at Chester, in 1699, a young man had his arm terribly injured. While Owen was operating some spirits in a nearby basin caught fire, and spilling upon him set his clothes on fire:

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* The William Potter Memorial Lecture of the Jefferson Medical College, February 4, 1932.

> . . . and there being a great crowd of spectators, some of them were in the way and in danger of being scalded, as the surgeon was, upon the hands and face, but running into the street, the fire was quenched; and so quick was he, that the patient lost not very much blood, though left in that open bleeding condition.

Among its early practitioners Philadelphia could boast one who was reputed a conjuror or magus, Dr. Christopher Witt, a native of England who came to Philadelphia in 1704, and practiced there until his death in 1765, at the mature age of ninety. Dr. Witt was a Rosicrucian and an astrologer, as well as a physician. He cast horoscopes and nativities and was regarded with much awe as well as respect. He was probably the only physician in Philadelphia's medical history who practiced urinoscopy, that is, made his diagnosis and prescribed his treatment by inspection of the urine. He made a good deal of money which he left to some people who had been kind to him on his arrival, their kindness consisting in giving him a hat to replace his own which he had lost on shipboard coming over.

It was not many years before the population and material wealth of Philadelphia had increased to such an extent as to attract physicians to settle there. In 1711, a few years before the death of "tender Griffith Owen," Dr. John Kearsley arrived from England. Where he received his medical education is not known, but it must have been a good one and he turned it to good account in the land of his adoption. When he settled in Philadelphia Kearsley was twenty-six years old. He soon acquired a large practice and until his death in 1772 at the age of eighty-eight he was one of Philadelphia's most prominent physicians and respected citizens. Dr. Kearsley was deeply interested in architecture and building and to his skill and interest we owe two of the most beautiful colonial structures yet standing in the city, Christ Church and St. Peter's Church. In those days there were no medical colleges in the Colonies and young men desirous of studying medicine apprenticed themselves to some doctor for that purpose. Kearsley was for many years the most sought out teacher of his day and he trained more men who came to subsequent eminence than any of his contemporaries. To prove this I need only mention that among his distinguished pupils were Lloyd Zachary, Thomas Cadwalader, William Shippen, Sr., John Redman, John Bard and his own nephew, John Kearsley, Jr., every one of whom attained eminence in their profession. Kearsley was a hard taskmaster. One of his apprentices, Dr. John Bard, has left us a sad picture of his experiences: "At the age of 14 or 15 years he was, according to the custom of the day, bound apprentice to Mr. Kearsly (*sic*), an English surgeon of good talents, but of so unhappy a temper, that his presence banished cheerfulness from his family. He treated his pupils with rigor and submitted them to the most menial employments."[1] Bard says that his life would have been unbearable had it not been for the kindness of Mrs. Kearsley, a friend of his mother's. The apprentice's duties were by no means confined to strictly professional matters. There were no apothecary shops in the Colonies at that time; the doctors were thus compelled to prepare their own drugs and put up their prescriptions themselves. Consequently the doctor's office was literally a shop. In a recently published book[2] Dr. Blanton describes the "shop" of Dr. Hugh Mercer, a graduate in medicine at Aberdeen, who subsequently became a brigadier-general in the Revolutionary Army and met a hero's death at the battle of Princeton. It still stands in Fredericksburg, Va. "Within it may be seen the original shelving and some of the original hand blown bottles, curious Eighteenth Century scales, colored carboys, the great mortar and pestle, firkins and assorted vials, all set up and arranged as they must have been in the last days of the Eighteenth Century." Among the duties of the apprentice were to keep the shop clean and neat; like Sir Joseph Porter, K.C.B., "to sweep the floor, and polish up the handle of the big front door," make the fires, carry remedies to patients and run other errands, and make himself generally useful as an office boy.

As has been said Dr. Kearsley had received his medical education in England before coming to Philadelphia. Whether he impressed on his pupils the great advantages to be obtained by a course of study in Great Britain or on the Continent we do not know, but the fact remains that a number of his pupils, after the completion of their apprenticeship under Dr. Kearsley, crossed the Atlantic to continue their studies abroad.

Lloyd Zachary and John Redman were among those who undertook the then long, expensive and dangerous voyage in order to get a better medical education than could be procured in this country. Lloyd Zachary (1701–1756) went abroad in 1723. We do not know exactly where he pursued his studies, except that he was at Leyden for a time. The Library of the Pennsylvania Hospital contains some of the books which he brought home with him and which were given to it after his death. He was one of three men who made up the first staff of the Pennsylvania Hospital when it was founded in 1751. John Redman (1722–1806) spent a year in Edinburgh, another at Guy's Hospital in London and the hospitals at Paris, and then went to Leyden, where he received his degree of M.D. in 1748. Redman became the first president of the College of Physicians of Philadelphia when that venerable body was founded in 1787, and his diploma is one of its cherished possessions.

About the same time or a little later than Lloyd Zachary and Redman went abroad, other young Philadelphians did likewise. Among them we should remember a few for the great services rendered by them subsequently in the development of organized medical education in this country. One of them, Thomas Cadwalader (1708–1779) studied under the great Cheselden, the leading surgeon of his day in London. Cheselden was especially famous for his skill in operating on cataract and as a lithotomist. He could remove a stone in the bladder by the lateral operation in fifty-four seconds. When Cadwalader returned to Philadelphia he gave demonstrations in anatomy to his professional colleagues who had been unable to avail themselves of the advantages of foreign study. Dr. Cadwalader wrote an "Essay on the West India Dry Gripes" which was published by Benjamin Franklin. The "Dry Gripes" was very prevalent in Philadelphia because of the very general habit of the citizens of drinking Jamaica rum. As the latter was distilled in leaden pipes the condition was really due to lead poisoning. Dr. Cadwalader was distinguished for his kindness and courteous manners. The latter saved his life on one occasion. A certain lieutenant Brulman of the British Army was seized with a homicidal mania. Arming himself with a gun he sallied forth with the determination to shoot the first man he might meet. This happened to be Dr. Cadwalader, who gave him such a kindly greeting that the Lieutenant avowed later he had not the heart to kill him. Unfortunately a few minutes later he met a Mr. Robert Scull who had not Dr. Cadwalader's pleasing ways, so the Lieutenant shot and killed him, for which he was duly executed.

Dr. Thomas Bond (1712–1784) after the expiration of his apprenticeship went abroad. Beyond the fact that he studied at the Hôtel Dieu in Paris we know nothing of the course he pursued. Dr. Bond returned to Philadelphia in 1734, and won high rank in the profession by his surgical skill. He was especially distinguished as a lithotomist. Dr. G. W. Norris[3] corrects the statement of Dr. Paul F. Eve that about 1760 Dr. John Jones performed the first lithotomy in the United States. The records of the Pennsylvania Hospital show that Dr. Thomas Bond performed a successful lithotomy at the Pennsylvania Hospital on October 29, 1756, antedating Dr. Jones' case by four years. Norris quotes from a letter written in 1772 by one who had witnessed Bond operate the following account of an operation by him:

> I had the curiosity last week to be present at the hospital, at Dr. Bond's cutting for stone, and was agreeably disappointed, for instead of seeing an operation, said to be perplexed with difficulty and uncertainty it was performed with such ease, regularity, and success that it scarcely gave a shock to the most sympathizing bystander, the whole being completed, and a stone of two inches in length, and one in diameter, extracted in less than two minutes.

Most of you probably have read Benjamin Franklin's Autobiography in which he disclaims the credit, often ascribed to him, of having been the founder of the Pennsylvania Hospital, and gives it unreservedly to Dr. Bond. Bond, with his brother Phineas and Lloyd Zachary, constituted the first staff of the Pennsylvania Hospital, and he was one of the founders and the first vice-president of the American Philosophical Society. To Dr. Thomas Bond belongs the credit of instituting the first systematic courses of clinical or bedside teaching in this country. The Medical Department of the University of Pennsylvania, the earliest medical school in this country, was established by Drs. John Morgan and William Shippen, Jr., in 1765 and one year later, in 1766, Dr.

Bond requested permission of the Board of Managers of the Pennsylvania Hospital that he might utilize its facilities for giving courses of clinical lectures. This was granted and Bond lectured regularly at the Hospital for many years. Bond was a Trustee of the College of Philadelphia (University of Pennsylvania) in 1765, and it was largely through his efforts that the medical school of the College was founded in that year. His clinical lectures at the Pennsylvania Hospital were officially recognized by the Board of Trustees of the College as pertaining to the curriculum of the Medical School.

Phineas Bond (1717–1775) went abroad and studied in Leyden, Edinburgh, Paris and London, although he did not get a medical degree. As said before he was one of the three physicians who constituted the first staff of the Pennsylvania Hospital. Like his brother he was one of the Trustees of the College of Philadelphia (University of Pennsylvania) in 1765, and was most zealous in forwarding the plan of establishing a medical school in connection with it, although he never became a member of the Faculty. He was also one of the founders of the American Philosophical Society.

Cadwalader Evans (1716–1773), who became a member of the staff of the Pennsylvania Hospital in 1759, pursued his medical studies in England. He practiced for several years in Jamaica before returning to Philadelphia.

From the year of its foundation, 1751, until many years later, the medical activities of Philadelphia were largely centered in the Pennsylvania Hospital and its early history is well worth recalling. I have referred to Benjamin Franklin's generous disclaimer of the credit of being its founder, and his naming Thomas Bond as the real author of the scheme. Before the Pennsylvania Hospital there existed in the Colonies many almshouses or poorhouses, which in later years developed into hospitals. Thus the Philadelphia General Hospital is an outgrowth from the Almshouse which was established by the City of Philadelphia in 1731.[4] Bellevue Hospital in New York originated as the "Publick Workhouse and House of Correction of the City of New York" in 1735, and the Charity Hospital of New Orleans was opened in 1736 as "l'hôpital des pauvres de la charité." These institutions are now great hospitals but they were not founded as such.

The Pennsylvania Hospital was first established in a house rented for the purpose on High Street near Seventh. Four years later it was moved into the buildings at Eighth and Pine Streets which it still occupies. The cornerstone can be still seen in the basement wall near the southern end of the eastern front of the buildings. It was laid with Masonic rites on May 18, 1755, and bears the following inscription written by Benjamin Franklin:

IN THE YEAR OF CHRIST
MDCCLV
GEORGE THE SECOND HAPPILY REIGNING
(FOR HE SOUGHT THE HAPPINESS OF HIS PEOPLE)
PHILADELPHIA FLOURISHING
(FOR ITS INHABITANTS WERE PUBLICK SPIRITED)
THIS BUILDING
BY THE BOUNTY OF THE GOVERNMENT
AND OF MANY PRIVATE PERSONS,
WAS PIOUSLY FOUNDED
FOR THE RELIEF OF THE SICK AND MISERABLE;
MAY THE GOD OF MERCIES
BLESS THE UNDERTAKING.

As you are aware, Benjamin Franklin generally pulled the strings which made things go, but at the same time allowed other people to appear in the foreground of his various projects. Although the chief credit for the successful launching of this great institution was undoubtedly due to him, when it came to organizing the Board of Managers he contented himself with the position and title of Clerk of the Board, and Joshua Crosby, a wealthy and respected merchant, was elected its President.

Franklin in his Autobiography tells of one of the clever means he employed to obtain a grant of money for the Hospital from the Legislature. When a bill was introduced into that body asking for a grant of money for that purpose the country members objected as it would only be serviceable to the city and they doubted if there was much desire for a hospital even by the citizens. Franklin thereupon got a bill passed granting the Hospital 2,000 £, provided that he could raise an equivalent amount by voluntary subscriptions. The country members thought he could never raise such a sum and that they might safely acquire credit for charitable intentions by voting for the bill, never thinking that their bluff might be called. Franklin used their consent to its passage as a lever to induce people to give money enough to raise the necessary sum, and as usual he was successful. He writes; "I do not remember any of my political manouvers, the success of which at the time gave me more pleasure; or wherein, after thinking of it, I more easily excused myself of having made some use of cunning."

The first minutebook of the Board of Managers in Benjamin Franklin's own handwriting is jealously guarded by the Hospital to the present day. When Joshua Crosby died in 1756 Franklin was elected President of the Board.

The first buildings of the Hospital were those at the Eighth Street end of the Pine Street front. The center building and west wing were not finally completed until 1796.

One of the objections made to the establishment of the Hospital was that the physicians to it would have to be paid. This was overcome when Drs. Thomas Bond, Phineas Bond and Lloyd Zachary agreed to serve without pay, and "Drs. Graeme, Cadwalader, Moore and Redman to assist in consultations on extraordinary cases." We are apt to think of occupational therapy as something very modern, but we find the Managers providing the Hospital with large and small spinning-wheels, two pairs of cards, and some wool and flax, "to employ such Patients as may be capable of using the same."

Special provision was made for the care of the insane from the opening of the institution. Thus a gallery was provided where they could take exercise. There was one thing, however, in regard to the insane patients which seems most shocking to modern ideas. The hospital at first stood in an open lot, unsurrounded by any fence or wall, and people used to gather about the Hospital and stare at the insane and sometimes tease them. To obviate this a fence was built, but even that was insufficient to prevent the access of the curious, so that on May 10, 1762, the Managers stated:

> The great crowds that invade the Hospital give trouble and create so much disturbance, that Samuel Rhoades and Jacob Levis are directed to employ a

workman to make a suitable hatch door and get an inscription thereon notifying that such "persons who come out of curiosity to visit the house should pay a sum of money, a Groat at least, for admittance."

It was not until 1791 that this practice was put a stop to.

Some of the early entries regarding patients are very amusing. Thus on March 1, 1763: "Discharged James Romage being too Ancient to hope Success from the Operation he returned thanks"; "Edward McCormick Cross'd in Love gave a note to pay when able"; Anna Goetz had "Hysterick Passions her Son John Goetz her Security." There are a number of records of the admittance of patients injured by Indians. On "March 31, 1766, Admitted David Howell, a poor Patient from Berks County, having a Gunshot wound and fractured Bone on one Arm done the 6 inst. by Enemy Indians," and on October 3, 1764, "Admitted Margaret Sinclair, a poor patient, with Disiness in the Head having been much abused by the Indians."

On October 13, 1755, "Michael Higgins, a Soldier, was admitted, having his under jaw shot off in the late Engagement under General Braddock."

In 1755, the English having confiscated the lands of the French settlers, in Nova Scotia, a number of the latter were deported and some 1400 of them were landed in Philadelphia in September of that year. They were placed in a cantonment of sheds and huts near Sixth and Pine Streets, and many of them were admitted from time to time to the Hospital.

Although elsewhere in the Colonies many leading medical men were Tories, in Philadelphia all the medical men of prominence, with the exception of two, John Kearsley, Jr., and Abraham Chovet, to whom I shall refer later, were ardent patriots. The managers of the Pennsylvania Hospital were almost all of them Quakers and many of them refused to participate on either side in the Revolutionary War; consequently between two stools they fell to the ground. Four of the Managers were sent in exile to Staunton, Va., by order of the Council of Safety, because of this pacifist attitude. While the Americans still occupied the city wounded and sick soldiers were occasionally sent into the wards. The British occupied Philadelphia from November, 1777 to May, 1778 and they made extensive use of the Hospital's facilities. Although the Managers tried to get some compensation for this they never succeeded. When the Americans reoccupied the city, the Managers entered into an agreement with the Medical Department of the Continental Army, whereby the latter was given the use of the "Elaboratory" of the Hospital to prepare their medicines for the use of the military hospitals, and the Hospital also agreed to receive a number of sick and wounded soldiers in its wards.

More directly concerning medical education in the Colony was the foundation of the first public medical library in the Colonies, at the Hospital in 1763. In 1762 John Fothergill presented a book "An Experimental History of the Materia Medica," by William Lewis, F.R.S., to the Hospital. The following year (May, 1763) the physicians of the Hospital addressed the following proposal to the Managers:

> As the Custom of most of the Hospitals in Great Britain has given such gratuities from those students who attend the Wards of the Hospital to the Physicians and Surgeons attending them, we think it properly belongs to us to appropriate the Money arriving from thence. And we propose to apply it to the founding of a Medical Library in the Hospital which we judge will tend greatly to the Advantage of the Pupils and the honor of the Institution.

The Managers acceded to the proposal of the staff. The Library throve vigorously and until supplanted by the later growth of the Library of the College of Physicians it was one of the best medical libraries in the country. It contained 14,500 bound volumes in 1884.

Another way in which the Pennsylvania Hospital did much to forward medical education in Philadelphia was by permitting the doctors to teach students in its wards, the Hospital granting a certificate to such students after their completion of a term of study. These certificates were highly prized by their recipients.

In addition to these courses the attending physicians used to bring their private or office pupils to the Hospital to give them bedside instruction, and teach them the art of applying dressings and carrying out other procedures. In 1773 the Managers instituted the plan of taking apprentices into the Hospital. These young men were regularly indentured to the Hospital for a term of five years, at the end of which time if their work had been satisfactory they were presented with a suitably inscribed certificate and a suit of "cloathes." This custom prevailed until 1824 when it was given up, the Managers inaugurating the system of electing only graduated physicians as resident medical officers, thus beginning the present system of interneship.

In the early seventeen-sixties the teaching of medicine in Philadelphia entered upon a really important phase, marked by the advent of a group of young men who had received their medical education in Great Britain or on the Continent, and I shall turn from the history of the Pennsylvania Hospital for a few moments to consider briefly the training of these men and then take up once more the thread of the story of medical education in Philadelphia.

Of the medical men of whom I have spoken you may notice that but one, John Redman, obtained a medical degree. During the colonial period and for many years afterwards there was no legal requirement by which a degree of M.D. was necessary in order to practice medicine. In those good old days there were no medical colleges and no state boards of licensure. The uttermost requirement of the prospective candidate for practice was a certificate from some practitioner of medicine, generally likewise degreeless, that he had served an apprenticeship. This makes it all the more creditable that so many young men should not have been satisfied with such training and have been willing and anxious to go through so many difficulties to get a better medical education abroad. Be that as it may the pioneers who went abroad reaped their reward on their return. The superiority of their equipment gave them a manifest advantage over their professional colleagues and undoubtedly induced an increasing number of medical aspirants to follow their example, and they also undoubtedly urged the young men who came to them as pupils to do as they had done. Consequently the number of young medical men who went abroad showed a steady increase. We have some figures which throw light on this subject. Dr. J. Gordon Wilson[5] has studied the records of the Medical School of the University of Edinburgh, and has found that from 1765 to 1779, despite the interruption of the War of the Revolution no less than 112 Americans received the degree of M.D., and that there were many other Americans enrolled among its students who did not get the degree.

Although the majority of American students went to Edinburgh, not all of them did so. John Redman's diploma from Leyden hangs in our College of Physicians. John Jones, the great colonial surgeon who wrote the textbook most in use by the surgeons in the American Army during the Revolution, "Plain Remarks upon Wounds and Fractures," got his M.D. from the University of Rheims in France. Why did the majority go to Edinburgh? In the first place because they naturally went to a British rather than a continental university because Great Britain was their mother country. Secondly Edinburgh was at the height of its fame as a medical center. Robert Whytt, the Monros, William Cullen, Joseph Black and other members of its faculty were unsurpassed as teachers in their various fields. Lastly young Philadelphians had a special reason for going to Edinburgh. It was the Alma Mater of John Fothergill (1712–1780), the great Quaker physician of London, friend of Benjamin Franklin and benefactor of the Pennsylvania Hospital. Fothergill's father and brother had travelled in Pennsylvania on missions to the Quakers of that Province and the whole family were deeply interested in its affairs. Benjamin Franklin and Fothergill had corresponded before Franklin went over to England as the representative of Pennsylvania. On different occasions Franklin spent many years in London and was on terms of the closest intimacy with Fothergill. Every young Philadelphian who went abroad to study carried letters of introduction from Franklin, or if Franklin was in London called on him. Fothergill was a kind friend to many of these young men. If they remained to work in London he introduced them to the various hospitals, Guy's, Bartholomew's or St. Georges's, where they could become pupils or dressers, or he brought them in contact with the Hunters or others of the many excellent teachers then flourishing in London. But to get the degree of M.D. he sent them to Edinburgh, where the restrictions were not so onerous as in the English universities, and the degree was held in higher esteem.

A fact worth noting in our early medical history is that there was no distinction made in the qualifications necessary to practice, either as a physician or as a surgeon. This is curious when we reflect on the marked distinction which prevailed in England during this period between physicians and surgeons. In this country such a differentiation was never made either legally or by any of the medical schools. The physicians elected to the staff of the Pennsylvania Hospital were not elected to serve as physicians or surgeons until many years after its foundation.[6]

One of the first young Americans to use to advantage the medical education he had received at Edinburgh was William Shippen, Jr. (1736–1808).

After studying under the Hunters in London and working in close association with Dr. Hunter's assistant William Hewson, the brilliant young investigator whose studies on the coagulation of the blood and the lymphatic system have given him immortal fame, although he died when but thirty-five years old, Shippen went to Edinburgh where he graduated M.D. in 1761. In the following year he returned to Philadelphia. During his stay in London Shippen had talked to Fothergill about his plans for teaching anatomy and midwifery in Philadelphia, and Fothergill had taken much interest in them. As I have stated, Dr. Fothergill was deeply interested in the affairs of the Quakers in the Colonies, and particularly interested in Philadelphia because of his friendship with Benjamin Franklin, and as the latter was so much concerned with the Pennsylvania Hospital, Fothergill showed deep interest in the Hospital by becoming one of its earliest and most generous benefactors. When Shippen sailed for America, Fothergill sent over in his care to the Pennsylvania Hospital a number of drawings and casts to be used for teaching purposes. Fothergill wrote to the Managers of the Hospital:

> I need not tell thee that the Knowledge of Anatomy is of exceeding great use to Practitioners in Physic and Surgery and that the means of procuring subjects with you are not easy, some pretty accurate anatomical Drawings about half as big as the Life have fallen into my hands and which I propose to send to your Hospital to be under the care of the Physicians and to be by some of them explained to the Students or Pupils who attend the Hospital. In the want of real Subjects these will have their Use and I have recommended it to Dr. Shippen to give a Course of Anatomical Lectures to such as may attend, he is very well qualified for the subject and will soon be followed by an able Assistant Dr. Morgan both of whom I apprehend will not only be useful to the Province in their Employments but if suitably countenanced by the Legislature will be able to erect a School for Physic amongst you that may draw many students from various parts of America and the West Indies and at least furnish them with a better Idea of the Rudiments of their Profession than they have at present the Means of acquiring on your Side of the Water.

The crayon drawings in color were made by Van Rymsdyk, a Dutchman living in London and reputed the best anatomical artist of his day. He illustrated William Hunter's great book "The Gravid Uterus," the only medical book published by Baskerville.

Shippen arrived in Philadelphia in the spring of 1762, and in the following November began his first course of anatomical lectures. His introductory lecture was given in the State House on November the sixteenth. The subsequent lectures were given in his father's house on Fourth Street until after some years he built an anatomical theater for himself. Shippen's anatomical lectures were a great success. He is said to have had two hundred and fifty students in attendance at one time. Subsequently he added courses in midwifery to those on anatomy.

Dr. Shippen's courses on midwifery were given to women who wished to become midwives, as well as to men intending to practice obstetrics. The announcement of the course states:

> In order to make the course more perfect, a convenient lodging is provided for the accommodation of a few poor women, who otherwise might suffer for want of the common necessaries on these

> occasions, to be under the care of a sober, honest matron, well acquainted with lying-in women, employed by the Doctor for that purpose. Each pupil to attend two courses at least, for which he is to pay five guineas.
>
> The female pupils to be taught privately, and assisted at any of their private labors when necessary.

Watson[7] states that the practice of midwifery by physicians "came into use only in the year 1790," yet Shippen certainly practiced obstetrics as early as 1762 and Norris[8] quotes Thomas Cadwalader's mention of a Dr. Spencer, who had a large obstetric practice in Philadelphia in 1745, having returned from Europe "recommended by the famous Dr. Mead, and several other eminent gentlemen of the Faculty of London, as a most judicious and experienced physician and man-midwife."

No systematic attempt to teach midwifery had ever been made before in this country, and though several attempts had been made to organize courses in anatomy they had all failed in a short time. After his election to the Professorship of Anatomy and Surgery in the Medical School of the College of Philadelphia, Shippen continued those on anatomy. During the winter of 1776–77 he was obliged to suspend them because of his duties as Director-General of the Medical Department of the Continental Army. He resumed his lectures in 1781.

Dr. Shippen taught anatomy as he had been taught the subject by William Hunter, that is by providing the students with bodies to dissect, although he also utilized the Fothergill pictures and casts at the Pennsylvania Hospital and other preparations. Like most of the anatomists of that day, he encountered much opposition. The house in which he conducted his classes was situated on Fourth Street above High (now Market) Street. It was attacked by mobs and the windows broken on several occasions. Once he escaped by running out an alley in the rear, but his carriage in which it was supposed he was concealed, which stood at the front door, was showered with stones, and a musket ball passed through the center of it.

> Several times he addressed the citizens through the public papers, assuring them that the reports of his disturbing private burying-grounds were absolutely false, and stating that the subjects he dissected were either of persons who had committed suicide, or such as had been publicly executed, except, he naively adds, "now and then one from the Potter's Field."[9]

Shippen had been giving his courses in anatomy and midwifery for several years when John Morgan (1735–1789) returned to Philadelphia in the spring of 1765. Morgan had received his M.D. from Edinburgh in 1763. During his stay abroad he had discussed with William Cullen the project of founding a medical college in Philadelphia, and in May, 1765, the Board of Trustees of the College of Philadelphia approved the plan which he submitted to them to found a medical school in connection with the College. The Trustees elected Morgan Professor of the Theory and Practice of Medicine in the College, and on May 3, 1765, he delivered his famous "Discourse on the Institution of Medical Schools in America" at the Annual Commencement of the College. In the following September (1765) William Shippen was elected Professor of Anatomy and Surgery in the School. Once again the Pennsylvania Hospital proved its value to medical education for you may recall that in the following year, 1766, Thomas Bond instituted the first course of clinical lectures in America in its wards, giving them in connection with the lectures given at the University by Morgan and Shippen.

In 1768 Adam Kuhn (1741–1817) who had received his M.D. from Edinburgh the previous year, was elected Professor of Materia Medica and Botany in the College, and the following year, 1769, the illustrious Benjamin Rush (1745–1813) was appointed Professor of Chemistry.

Such was the faculty of the University of Pennsylvania in 1769 and thus it remained until 1779. We do not have to seek far to account for the eminence of Philadelphia at that time as a medical center, when we realize that in a city of less than 25,000 inhabitants there was an organized medical school with a faculty composed of four graduates of the medical school of Edinburgh, John Morgan, William Shippen, Jr., Adam Kuhn and Benjamin Rush, a first-class hospital, the only one in the Colonies, with its wards open for clinical teaching, and a man like Thomas Bond giving clinical lectures, and with William Shippen, Jr., giving extramural lectures on anatomy and midwifery.

Shortly afterwards further facilities for the study of anatomy were offered by one of the most picturesque figures and ablest anatomists of the Colonial Period, Dr. Abraham Chovet (1704–1790), who came to Philadelphia in 1774. Dr. Chovet had given courses on anatomy in London, where he had been admitted as a foreign brother of the United Company of Barber-Surgeons in 1733.[10] Dr. Peachey has recently unearthed a number of interesting facts bearing upon Dr. Chovet's career before he came to Philadelphia. It must be recalled that until William Hunter began giving courses on human anatomy in 1746 in which the students actually dissected the parts themselves, anatomy in London was taught practically entirely by means of wax models, injected preparations and drawings or paintings. William Hunter went to Paris to prepare himself to teach anatomy and there he saw the infinite superiority of the French method of teaching by dissection over that in use in London. Chovet taught before Hunter wrought the change, and he was said to be a wonderful master of the art of preparing injected specimens and models. Peachey quotes one of his advertisements in December, 1733:

> To be seen this day and for the future, price 5s. at Mr. Lamark's, Surgeon, in Orange Street, Leicester Fields, Mr. Chovet, the surgeon's New Figure of Anatomy, which represents a woman chained down upon a table, suppos'd opened alive; wherein the circulation of the blood is made visible through glass veins and arteries: the circulation is also seen from the mother to the child, and from the child to the mother, with the Histolick (*sic*) and Diastolick motion of the heart and the action of the lungs. All which particulars, with several others, will be shown and clearly explained by Mr. Chovet himself. Note, a Gentlewoman qualified will attend the ladies.

Chovet left London and went to the West Indies, where he practiced at Kingston, Jamaica, until he fled with his wife and daughter to escape an insurrection of the slaves, and came to Philadelphia. Here he gave anatomical courses which seem to have been very popular. It is hard to see how he could compete with Shippen because he gave them in the old fashioned way by models, etc. The following advertisement of his course gives a reason why some might prefer them:

> AT THE ANATOMICAL MUSEUM
>
> in Videl's Alley, Second Street, on Wednesday, the Seventh of December (1774–5) at six in the evening
>
> Dr. Chovet
>
> will begin his course of Anatomical and Physiological Lectures, in which the several parts of the human body will be demonstrated, with their mechanism and actions, together with the doctrines of life, health and the several effects resulting from the actions of the parts; on his curious collection of Anatomical waxworks, and other natural preparations; to be continued the whole winter until the course is completed. As this course cannot be attended with the disagreeable sight or smell of recent disease, or putrid carcases, which often disgust even the students in Physick, as well as the curious, otherwise inclined to this useful and sublime part of natural philosophy, it is hoped this undertaking will meet with suitable encouragement.

Watson[11] quotes an interesting description of Chovet's appearance in his old age, by one who had often seen him:

> This aged physician was almost daily to be seen pushing his way in spite of his feebleness, in a kind of hasty walk, or rather shuffle, his head and straight white hair bound and hanging forward beyond the cape of his black old-fashioned coat, mounted by a small cocked hat, closely trimmed upward upon the crown behind, but projectingly and out of all proportion cocked before, and seemingly the impelling cause of his anxious forward movements, his lips, closely compressed (sans teeth) together, were in constant motion, as though he were munching something all the time; his golden-headed Indian cane, not used for his support, but dangling by a black silken string from his wrist; the ferule of his cane and the heels of his capacious shoes, well lined in winter time with thick woolen cloth, might be heard jingling and shaking the pavement at every step; he seemed on the street always as one hastening as fast as aged limbs would permit him to some patient dangerously ill, without looking at any one passing him to the right or left.

Chovet was so small in stature as to be almost a dwarf, and a great joker. Many stories are told of the jokes he perpetrated. He never was elected to the staff of the Pennsylvania Hospital, but was one of the founders of the College of Physicians in 1787. Although Chovet was an ardent Tory he was not molested during the disturbances incident to the Revolution, and was allowed to indulge in the expression of his feelings. He died March 24, 1790. A few years later his anatomical collections were purchased by the Managers of the Pennsylvania Hospital and placed with the donations of Dr. Fothergill in their museum. They were loaned to the University of Pennsylvania later and were destroyed in a fire in the museum of that institution in the eighties. The Pennsylvania Hospital possesses a very elegant wax medalion of Dr. Chovet, inscribed "Abraham Chovet, born May 25, 1704, drawn May 25, 1784, by his servant Dr. Eckhout."

Dr. William S. Middleton[12] has told the story of another Tory physician of prominence who did not fare so well as Dr. Chovet, John Kearsley, Jr., nephew of the distinguished architect of Christ Church, had come out from London to practice with his uncle in Philadelphia. He was a man of ability who had written an account of the "Angina Maligna" or "Putrid Sore Throat," and was associated with Dr. John Morgan and other prominent physicians in founding the Philadelphia Medical Society in 1766. Kearsley was not only an ardent but also an imprudent Tory. Christopher Marshall relates in his Diary that on August 6, 1775, a mob carted Isaac Hunt, a Tory lawyer, about the streets and made him make public apologies for his opinions.[13]

> As they were coming down town, stopping at the corner where Dr. Kearsley lives, to make his [Hunt's] declaration, it is said the Dr. threw open his window, snapped a pistol twice amongst the crowd, upon which they seized him, took his pistol, with another in his pocket from him, both of which were loaded with swan shot. In the scuffle he got wounded in the hand. They then took Hunt out of the cart, conducted him safe home, put Kearsley in, brought him to the Coffee House, where persuasions were used to cause him to make concessions, but to no effect. They then, with drum beating, paraded the streets round the town, then took him back to his house and left him there, but as the mob were prevented by the Associators, who guarded him, from tarring and feathering, yet after the Associators were gone, they then broke the windows and abused the house.

Alexander Graydon[14] was an eyewitness and says he was shocked "to see a lately respected citizen so vilified." A few months later, in October, 1775, he was arrested for treasonable correspondence with the British, sending a map and military information to them. Kearsley was sent to Lancaster, but the Council of Safety at Philadelphia having received word that he was seeking his release having "insinuated himself in the good Graces of a number of your Inhabitants and that they have applied for his enlargement, in order to attend them as a physician," transferred him to Carlisle, where he died insane in November, 1777.

And now that we have brought our account of medicine in Philadelphia down to the end of the Colonial Period let us glance for a moment at some of the conditions under which the physicians about whom we have been talking lived and worked.

In 1765 Philadelphia had only about 20,000 inhabitants, but there was much civic pride. Though the street paving would not seem much to boast of at the present time, nevertheless some of the streets in the neighborhood where most of the well-to-do lived had been laid with cobblestones, and there were no less than 374 street lamps. Its police force consisted of eighteen night watchmen, who patrolled the streets at regular intervals during the night, calling out the hour and state of the weather, sleeping out the intervals between the calls in their watchboxes which were frequently overturned by frolicsome youths.

The College of Philadelphia occupied a building on Fourth Street which had been erected by popular subscription to accommodate the crowds who flocked to hear the preaching of the Reverend George Whitfield in 1741. The medical lectures were given there, but Dr. Shippen gave his courses in anatomy and midwifery in rooms which has been arranged for the purpose in the rear of his father's house, which stood on Fourth Street above Market.

When it was built in 1755 the Pennsylvania Hospital was regarded as being quite on the outskirts of the city.[15] A great pond lay between it and the

State House, and the surrounding land was largely marsh and woodland. By the time of the Revolution the Walnut Street Prison had been built at Seventh and Walnut Streets and a number of dwelling houses erected in its neighborhood. An aged lady told Watson, the Annalist, in 1844, that she and her girl friends used to deem it a great frolic to go out in the Governor's Woods, which was a forest lying between Market and South and Broad Street and the Schuylkill, "Between Seventh and Eighth Streets they gathered wild strawberries; they entered the woods opposite the Hospital and proceeded through them to the Schuylkill. The road leading through them was very narrow, and the trees very lofty and thrifty." Then as now physicians were apt to dwell if not in friendly brotherhood at least in close vicinity to one another, and most of the prominent medical men of the city were clustered within a few blocks of the Delaware River. Thus William Clarkson, Nathaniel Dorsey, Peter Glentworth and Samuel Shober all lived on Front Street between Arch and South Street; Benjamin Rush moved from Front Street to Second Street between Chestnut and Walnut; John Morgan was at Second and Spruce; William Curry at Second and Pine; James Hutchinson and William Shippen, Jr. both lived on Second Street between Walnut and Spruce and John Redman on Second Street between Market and Arch. Watson states that only aged or infirm physicians used a carriage or made their visits on horseback. A young doctor who resorted to any mode of conveyance besides his own legs endangered his reputation and practice. Dr. Rush, when he lived on the bank of the Delaware, on the east side of Front Street above Walnut used to walk to Kensington to visit patients in the early years of his professional career. Dr. Thomas Bond, however, went his rounds in a small phaeton, and John Redman always rode a "small black Filly."

I have tried to present a picture of medical Philadelphia in the eighteenth century, and tell you something of the physicians and institutions to which it owed its high standing. There remains one tribute more to be paid to them. To those men, their example and on the foundations they laid is owing a great part of the success of the wonderful school whose alumni I have had the honor of addressing. When George McClellan in 1824 established the Jefferson Medical College he and the brilliant men who were associated with him, and those who succeeded them, inherited the medical traditions of Morgan, Shippen, Kuhn, Rush, Physick and Wistar. If it had not been for the high standing and marked ability of the men who served Jefferson during its early years it could never have survived against the prestige of its older rival. Look at the names that appear upon the Faculty of Jefferson from its birth down to the present. To mention but a few, Nathan R. Smith, John Eberle, W. P. C. Barton, Robley Dunglison, Joseph Pancoast, Thomas Dent Mütter, Charles D. Meigs, and Samuel D. Gross are certainly worthy in every respect to be classed with their colonial predecessors. Their successors down to the present day are animated by the same traditions and ideals and long may your great heritage be carried on and perpetuated.

References

1. Thacher. Med. Biog. 1828.
2. Blanton, W. B. Medicine in Virginia in the Eighteenth Century. Richmond, Garrett and Massie, 1931.
3. Norris, G. W. Early History of Medicine in Philadelphia. Phila., 1886, footnote, p. 25.
4. The first record of the appointment of any physician to attend the sick in the Philadelphia Hospital is not found until 1769, in which year Thomas Bond and Cadwalader Evans were "reelected" physicians to the Almshouse. Of course this indicates that they had previously held their positions but there is no evidence to indicate that they served in that capacity for any length of time. They each received a salary of £50 a year, out of which they had to provide the necessary medicines for the sick. Until 1788, "there is no evidence that the medicines requisite for the sick were prepared in the house, or that persons instructed in medicine resided in the institution." (D. Hayes Agnew, The Medical History of Blockley.) In that year an apothecary shop was founded within the hospital with a pharmacist in charge.
5. Wilson, J. G. President's Address to the Institute of Medicine of Chicago, Dec. 4, 1928. Rep. from *Proc. Inst. Med. Chicago*, Vol. 7, Feb. 1929.
6. The first distinction officially made as to the duties of the staff was in 1810, when Thomas Chalkley James was elected physician to the Lying-In Department. In 1821 when Joseph Hartshorne resigned the Board of Managers elected Dr. William Price as surgeon to succeed him. Finally in 1823 the Staff was officially divided into physicians and surgeons, plus the physicians to the Lying-In Department.
7. Watson. Annals of Philadelphia. Phila., 1848, vol. 2, p. 384.
8. Norris, G. W. The Early History of Medicine in Philadelphia. Phila., 1886, p. 40.
9. Norris, G. W. Early History of Medicine in Philadelphia. Phila., 1886.
10. Peachey, G. C. A Memoir of William and John Hunter. Plymouth, England, 1927.
11. Watson. Annals of Philadelphia. Phila., 1848.
12. Middleton, W. S. Ann. Med. Hist., 3: 391, 1921.
13. Hunt had married a Miss Shewell, whose sister was the wife of Benjamin West, the artist. Hunt left Philadelphia and thereafter lived in England, where his son Leigh Hunt, the essayist and poet, was born.
14. Graydon, A. Memoirs. Phila., 1846.
15. Graydon, writing of Philadelphia in 1755 says, "with the exception of here and there a house, the Fifth Street might then have been called the western extremity of the city."

THE HISTORY OF LARYNGOLOGY AND RHINOLOGY AND THE INFLUENCE OF AMERICA IN THE DEVELOPMENT OF THIS SPECIALTY*

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THE study of Laryngology may be divided into two periods: the pre-laryngoscopic period and the laryngoscopic period. In investigating the discovery of the laryngoscope we find no mention made of it prior to the eighteenth century, although many attempts were made to investigate the upper air passages by instrumental aids.

M. Levret,[1] a distinguished French accoucheur of a highly inventive turn, in 1743 according to Morrell Mackenzie, devised instruments for inspecting the throat and nares.

Dr. Bozzini[1] of Frankfort in 1804 devised a speculum for studying various cavities of the body including the larynx. This was a clumsy instrument and consisted of tubes or specula of various sizes to suit the canals to be inspected. It consisted of a double cannula with a mirror placed at an angle at the end. This speculum which transmitted light through one compartment, reflected it from the mirror on the parts to be examined.

M. Cagnaird de la Tour[1] of France in 1825, and Dr. Senn of Geneva in 1827 made unsuccessful attempts to get a view of the interior of the larynx.

Dr. Benjamin Guy Babington[1] in 1829 exhibited before the Hunterian Society of London an instrument which closely resembles the one now in use. It consisted of two mirrors, one for receiving the image and the other for reflecting the light on the parts. He used sunlight as a source of illumination. Many others devised instruments for inspecting the larynx, and Trousseau and Belloc[1] made many unsuccessful attempts in 1837 to view the interior of the larynx in their studies of laryngeal phthisis.

Robert Liston,[1] an English surgeon, suggested the use of a mirror which could be used in treating edematous tumors in 1840. Baumes[1] in 1838 exhibited at the Medical Society of Lyons a mirror about the size of a two franc piece, which he claimed was very useful in examining the larynx and posterior nares. Mr. Avery of London[1] in 1844 suggested the use of two mirrors. He used a reflecting mirror attached to the head and reflected the light on the laryngeal mirror which was attached at the end of a speculum. Warden of Edinburgh[1] in 1844 claimed he was able to see the interior of the larynx by the use of refracting prisms.

Long before the discovery of the laryngoscope eminent Americans were working in the field of laryngology. Philip Syng Physick,[2] Father of American Surgery, was born in Philadelphia July 7, 1768 of English parents. His father was custodian of the Great Seal of the Colony of Pennsylvania before the Revolution. Philip Syng Physick was educated at The Friends' Academy and later graduated from the University of Pennsylvania.

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In 1789 he went to London and became a pupil of John Hunter. He lived with Hunter and assisted him in his practice and after serving as house surgeon at St. George's Hospital he received his diploma from the Royal College of Surgeons. In the year 1792 he graduated in medicine at the University of Edinburgh. The subject of his thesis was apoplexy, and he was obliged to write it in Latin, and the original manuscript copy of this essay, which he first wrote in English was in the possession of Dr. J. Randolph of Philadelphia for many years. In September, 1792 he returned to his native city and was active in the frightful epidemic of yellow fever in 1793. His most noteworthy efforts at that time were postmortem studies of yellow fever.

During his life he received many professional honors; in 1825 he was elected a Member of the Royal Academy in France, the first American to receive that honor. In 1836 he was an Honorary Fellow of the Royal Medical and Chirurgical Society of London, and was the President of the Academy of Medicine of Philadelphia for many years. It is doubtful whether any of these honors so affected him as the service of silver plate he received in recognition of his services at the Bush Hill Isolation Hospital in the yellow fever epidemic in 1798.

The close observation and vast experience of Philip Syng Physick won him a nation-wide reputation. As an ophthalmic surgeon he performed many iridectomy and cataract operations. Orthopedic surgery with its call for mechanical ingenuity appealed to him. Many suggestions for the improvement of splints and the methods of treating fractures were made by him, and the use of the seton in ununited fractures was an original contribution by Physick. The most famous operation of his long career was that of lithotomy, on Chief Justice Marshall for stone in the bladder. Two valuable contributions to surgery are the animal ligature and the hemostat by Physick. In 1828 he invented the tonsillotome and his method in the tonsillectomy operation with slight modifications is in use today. He used the snare in the form of a double cannula, and the guillotine or tonsillotome, which he also used in the amputation of the uvula. He devised a long forceps to fix the tonsil for manipulation prior to enucleation. Philip Syng Physick died on December 15, 1837.

Dr. John C. Cheesman[3] of New York, attending surgeon to the New York Hospital from 1821 to 1856, was the first contributor to American laryngology. His article on "Diseases of the Larynx and Trachea with Report of a Growth of the Pharynx and Larynx" (in 1817) was the first of its kind on our records. It was a case of papilloma of the vocal cords, the patient dying without relief. In the pre-laryngoscopic period tumors of the larynx were suspected but only diagnosed on postmortem examination.

Dr. Horace Green,[4] the father of Laryngology in America, was born in New York, December 24, 1802. He was of the seventh generation of his family in this country. His father and three brothers served in the Army in the Revolutionary War, his father being the only one of the brothers who survived that struggle. Horace Green graduated from the Castleton Medical College, in Vermont, in the year 1824. He practiced medicine for a number of years in Rutland and in

1830 he attended lectures at the University of Pennsylvania. He returned to Rutland and practiced there until 1835 when he removed to New York. In 1838 he visited Europe and commenced his investigations of diseases of the air passages under Trousseau. In that year he made the first successful attempt in the method of making local applications by the natural air way in diseases of the larynx. He reported to the New York Medical and Surgical Society in 1840 a number of cases of diseases of the larynx, trachea and bronchi treated by means of local applications to the larynx. In 1842 Dr. Green was the first to introduce medicaments into the larynx of a child afflicted with croup. He removed a laryngeal polyp in a child eleven years old by means of a bent tenaculum and knife, depressing the tongue so that the growth was brought into full view. Dr. Green was a founder of the New York Medical College in 1850, was president of the faculty and occupied the chair of theory and practice of medicine in that institution. He received many degrees and was a member of several learned societies both at home and abroad to which he contributed valuable papers. His published works[5] were written while he pursued an extensive practice, and included "The Pathology and Treatment of Croup" in 1849; "On the Surgical Treatment of Polypi of the Larynx and Edema of the Glottis" in 1852; "Selections from the Favorite Prescriptions of Living American Practitioners" in 1858; the latter was translated into French. "A Treatise on Diseases of the Air Passages" (1846) had three editions. This treatise was received with great incredulity by the profession in New York and even by Trousseau. Trousseau and Belloc,[6] in their work published first in French in 1837 and translated into English in 1841, leave us in doubt as to whether they ever did enter the larynx and their own doubts as to this are emphasized in the scepticism in which they received the assertions of Green. The animosity engendered in the medical profession in New York was intense, he was vilified, the criticisms of him became so great he had to resign from one medical society in New York and came near being expelled from the Academy of Medicine. Jealousies in the medical profession have always existed and probably much of the criticism of Horace Green was due to the fact that he acquired a large following of sufferers from chronic catarrhal conditions of the upper air passages. Green evidently had great strength of character and lived long enough to win out against his opponents and to have his medical critics acknowledge that his claims of making applications of medicaments to the larynx were true.[7] The *Dublin Quarterly Journal of Medical Science, London Medical Gazette, British Foreign and Medical Review,* and *Edinburgh Monthly Journal of Medical Science,* acknowledged that he was successful in treating diseases of the larynx and favored the adoption of his mode of treatment in laryngeal diseases. This was the beginning of specialism not only in this country but abroad, and laryngology had its inception in America.

Dr. Gurdon Buck,[8] a distinguished New York surgeon, in 1848 had collected 49 cases of laryngeal growths and described his method of treating the larynx in cases of edema. He removed several large laryngeal tumors, operated by the sense of touch and improved the operation for tracheotomy. Gurdon Buck was acclaimed both in Europe and America "The Father of Intralaryngeal Surgery."

FIG. 1. MANUEL GARCIA (CENTENARIAN), DISCOVERER OF THE LARYNGOSCOPE, 1854.

Ten years after Horace Green announced his method of making local applications by the natural air way to diseases of the larynx, Manuel Garcia, "Father of the Laryngoscope,"[9] made his announcement of viewing the movements of the vocal cords in the living subject.

Manuel Garcia, an eminent teacher of singing in London, not being aware of what had gone on before, began his experiments on himself. He used a small mirror fixed to a long handle suitably bent. He passed the mirror back against the soft palate and uvula, and used sun-rays for his illumination, and the image thus obtained was directed to a second mirror in which the image was seen. He described his discovery as follows:[10]

If you should pass the Comédie Française on the way to Louvre in France and thence into the Garden of the Palais Royal and now called the Garden of Tuilleries, you can then picture to yourselves the attitude of Manuel Garcia when he was pondering over the mechanism of the voice. It is best told in his own words; "One September day in 1854 I was strolling in the Garden of the Palais Royal, preoccupied with the ever recurring wish, so often repressed as unrealizable, when suddenly I saw two mirrors of the Laryngoscope in their respective positions, as if actually present before my eyes. I went straight to Charriére, a surgical instrument maker, and asking him if he happened to have a small mirror with a big handle, was informed that he had a tiny dentist mirror, which had been one of the failures of the London Exhibition of 1851. I bought it for six francs. Having obtained a hand mirror I returned home at once very impatient to begin my experiment. I placed against the uvula, the little mirror which I heated in warm water and carefully dried, then flashing upon its surface with the hand mirror a ray of sun-light, I saw at once to my great joy, the glottis wide open before me, and so fully exposed, that I could perceive a portion of the trachea. When my excitement subsided I began to examine what was passing before my eyes, the manner in which the glottis opened and shut and moved in the act of phonation, filled me with wonder." This was the first successful attempt at autolaryngoscopy, and it was reserved for a layman, one who trained many of the great singers of Europe, to obtain the first successful view of the interior of the larynx in the living subject, and to make this remarkable discovery while experimenters and medical men failed to accomplish any definite results in the prelaryngoscopic period.

Shortly after his successful experiment he read a paper on his discovery before the Royal College of Surgeons in London, and was received with apathy and incredulity. In 1857 Garcia's paper fell into the hands of Dr. Ludwig Turck of Vienna, who began experimenting with the laryngeal mirror but felt there was not much practical benefit to be obtained, and threw the mirror aside. Dr. Johann Czermak of Buda-Pesth borrowed the mirrors from Turck and was quick to see the practical benefits to be obtained. He substituted artificial illumination for the uncertain sunlight, and this was the beginning of the Art of Medical Laryngoscopy, which was perfected by Czermak.

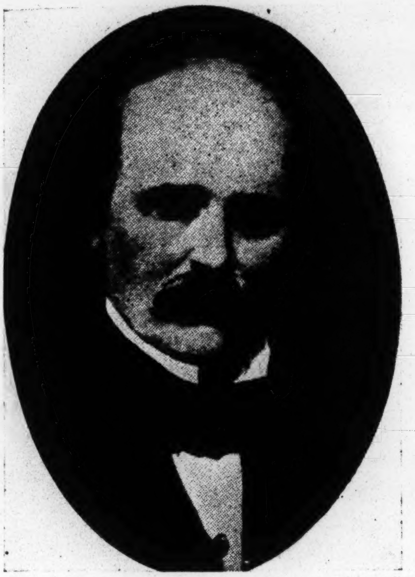

FIG. 2. PROFESSOR TURCK OF VIENNA, AWARDED RECOGNITION BY IMPERIAL INSTITUTE WITH CZERMAK IN USE OF LARYNGOSCOPE.

Manuel Garcia has also been spoken of as Garcia, the Centenarian. I had the pleasure of attending a banquet given in his honor in London on his ninetieth birthday. Frail as he was at that time he could still produce clear musical notes. On his one hundredth birthday, laryngologists from all over the world assembled to do him honor. Garcia died in 1906, in his one hundred and second year. Speaking of that occasion Sir St. Clair Thomson, an eminent laryngologist of London, said: "Since 1858 those who sat in darkness, peering into the problems of Laryngoscopy have seen a great light and let us like Garcia continue to be filled with wonder and thankfulness."

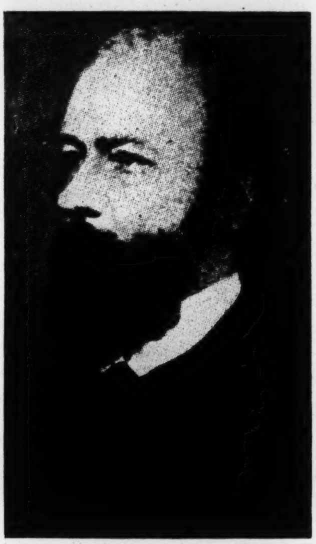

FIG. 3. PROFESSOR CZERMAK, BUDA-PESTH, FIRST TO DEMONSTRATE UTILITY OF THE LARYNGOSCOPE.

Prof. Ludwig Turck[11] and Prof. Johann Czermak[12] both travelled over Europe demonstrating the use of the laryngoscope. Turck practiced in the wards of the Allgemeine Krankenhaus and published his observations on intralaryngeal affections in numerous contributions which were published both in French and English. Semeleder, a student of Czermak, fixed the mirror in a spectacle frame which held the mirror more securely, and Czermak gave Semeleder credit for being the first to write on intralaryngeal pathology. At one of the meetings where Czermak gave public demonstrations of the use of the laryngeal mirror, Turck was present and immediately claimed priority in the use of it, which Czermak was fair enough to admit. The question of priority in the discoveries or inventions in medicine has always been heated, and I suppose will always continue to be so. Unfortunately in this case the strife between these two men became acute. Czermak later on described the method of inspecting the nasopharynx by reversing the mirror. Turck and Czermak continued their war to France both giving lessons in the art of laryngoscopy, and both claiming to have originated the idea. A commission of the Academy of Sciences of the Imperial Institute of France, appointed to investigate the rival claims, did not decide the question of priority, but gave them each honorable mention and an award of 1200 francs for their services to science in introducing the laryngoscope.

Morrell Mackenzie, returning to London after a visit to Vienna during the heated controversy between Turck and Czermak over the priority of the discovery of the laryngoscope, read a paper before the Royal College of Surgeons on the "Pathology and Treatment of Laryngeal Diseases" for which he was given the Jacksonian prize.[13]

Horace Green in 1858 procured a laryngoscope from Vienna through Dr. Ernest Krackowitzer, surgeon to New York Hospital, and with Dr. John H. Douglas was the first to use it in this country.[14]

The use of the laryngeal mirror brought about a new field in medicine and with the improvement in the apparatus for reflecting the light into the fauces, many unsuspected conditions were revealed. Laryngeal tumors were recognized, attempts at their removal were made by many observers, new instruments were invented, and the continued use of the laryngoscope with increased dexterity resulting from the practice of passing instruments into the larynx resulted in many reports of the removal of tumors from the larynx. Skillful observers were enabled to differentiate benign from malignant growths and to classify the types of tumors found in the larynx. Vienna became the great school for the study of diseases of the upper air passages by means of the laryngoscope. Students from all parts of the world commenced to flock there to receive instruction and Vienna with its wealth of clinical material offered facilities for studying which could not be obtained elsewhere. Voltoline and Semeleder did much to develop this new art in Germany and broadened the field of investigation from the larynx to the nasopharynx, and were the first to practice posterior rhinoscopy as an aid to the passage of the eustachian catheter.[15]

The first recorded case of the removal of a tumor from the larynx by the aid of the laryngoscope was by Lewin,[16] a German surgeon, in 1861. In a monograph he states that he had seen 50 or 60 cases of morbid growths in the larynx and that they constituted about 5 or 6 per cent of all laryngeal affections. He was undoubtedly the first to remove a laryngeal growth by the aid of the laryngoscope, although Von Bruns claims to have antedated him. Reports of endolaryngeal removal of neoplasms from the larynx followed rapidly.

The names of Drs. Louis Elsberg, J. Solis Cohen, and George M. Lefferts will ever stand out in the development of the art of laryngology in this country. Dr. Cohen[17] was the first in this country to do a laryngectomy, and in 1866 was the first to establish regularly organized instruction in laryngology at Jefferson Medical College. His work on Diseases of the Throat published in 1872 was a masterpiece, and even today holds its position as a textbook on diseases of the throat.

George M. Lefferts[18] developed the teaching of laryngology to undergraduates at the College of Physicians and Surgeons in New York. He had the faculty of impressing his students with a spirit of enthusiasm and his lectures on laryngology were classics. Dr. Lefferts founded the first journal devoted to this specialty.

Dr. Louis Elsberg[19] was awarded a gold medal in 1865 by the American Medical Association for his prize essay on "Morbid Growths of the Larynx."

America was the first to form laryngological societies and in 1873 the New York Laryngological Society was founded. This society was later merged into the Section of Laryngology of the New York Academy of Medicine. After the New York Laryngological Society came the American Laryngological Association which was the first national association to be established for the study of the diseases of the larynx, nose and throat. This Association held its first meeting in 1879, under the presidency of Dr. Louis Elsberg and with Dr. George M. Lefferts as secretary, and has maintained its high professional and ethical standards since it was established. Other special societies were formed throughout the world later on; thus were the art and science of laryngology spread throughout the principal countries of the civilized world.[20]

Clinton Wagner,[21] an ex-army surgeon and a native of Baltimore, established the Metropolitan Throat Hospital in New York City, the first hospital in this country devoted exclusively to the treatment of diseases of the nose and throat. This was in 1873 and in the same year he founded and organized the New York Laryngological Society. In about eight months' time Dr. Henry Oliver organized instruction at the Harvard Medical School.

In the year 1871, nine years after Lewin cited his cases of morbid growths of the larynx, Morrell Mackenzie[22] reported 100 cases that came under his observation and 89 cases occurring in the hands of other observers since the introduction of the laryngoscope, and classified these growths, which classification holds good today.

An outstanding case on the subject of laryngeal neoplasms is that of the Crown Prince of Germany,[23] in the tragedy of 1887. Frederick was the most popular prince Germany ever had; democratic in his tastes, and liberal in his ideas, he was known as "Unser Fritz." In January, 1887, while in his fifty-sixth year, he was seized with a hoarseness. His physician-in-ordinary, Surgeon General Wegner, called in consultation Dr. Gerhardt,[23] professor of medicine at the University of Berlin, and on March 9 he diagnosed a small growth on the left vocal cord. He was unable to determine the nature of the growth, whether it was benign or malignant. In about a fortnight, while making a speech the Crown Prince showed unmistakable evidences of hoarseness. Gerhardt made several attempts at the removal of this growth, and used the galvanocautery endeavoring to destroy the growth. This growth apparently disappeared and he went to Ems to try the waters. On his return to Berlin, Gerhardt found no improvement in the Crown Prince's condition, the hoarseness continued and the wound from the cauterization had not healed. Von Bergmann,[23] the leading surgeon in Germany at that time, was called in consultation and suggested the growth be removed by thyrotomy. He proposed that the Crown Prince be anesthetized and the operation done without explaining to the patient the character of the operation and its consequences. When the matter was laid before Bismarck and the Kaiser, they would not listen to it and demanded the most experienced laryngologist in the world should be called in consultation.

Fig. 4. Crown Prince and Princess of Germany, the Tragic Case of 1887.

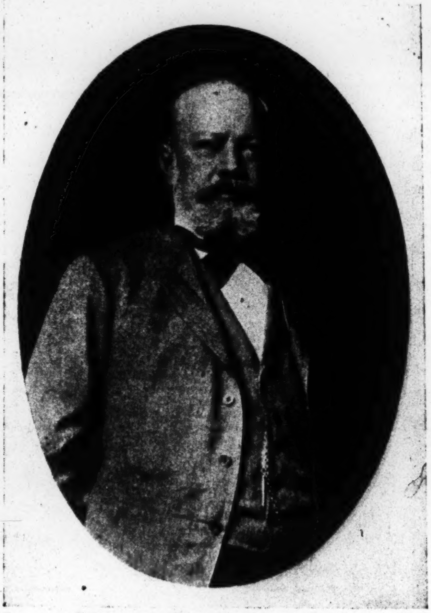

Fig. 5. Gerhardt, Professor of Surgery, University of Berlin.

Although opposed to the Crown Prince politically, and disliking the Crown Princess, Bismarck would not take the responsibility of having the heir to the throne operated on without further advice. Several names were suggested, one an Austrian, probably Professor Stoerk, and the other Morrell Mackenzie[23] of London, on account of his eminence in laryngology. Much controversy has arisen as to who selected Mackenzie. Emil Ludwig, German historian, attributes Mackenzie's selection to the Crown Princess. The controversy over the selection of Mackenzie became very acute, but was finally settled by the action of Sir Edward Malet, who after a visit from Bismarck at the Embassy, and learning of Mackenzie's preeminence in laryngology, arranged with Gerhardt and von Bergmann that Mackenzie should be called in consultation. The German doctors wired Mackenzie to come to Berlin, probably at the suggestion of Bismarck, who insisted that the most capable be selected regardless of nationality or politics. The Crown Princess stated she knew nothing of Mackenzie or the other doctors suggested for the consultation. According to Semon the call to Mackenzie came through the German doctors.

On May 20th Mackenzie arrived in Berlin, and not being aware of the condition of the case he had been called to see, did not bring his instruments with him. After an examination he announced that he was not sure an operation was necessary, and was not sure the growth was malignant, and asked that a fragment of this growth be submitted for a microscopical examination by Professor Virchow,[23] the renowned pathologist. Virchow's report was that the examination showed no signs of malignancy, but the fragment submitted for examination was so small that another specimen should be removed. Virchow's second report showed no signs of malignancy. Gerhardt and von Bergmann still insisted the growth was malignant, but in view of Virchow's two reports were less ardent as regards operating. Gerhardt went so far as to accuse Mackenzie of having nipped out a piece of the right vocal cord with the object of deceiving Virchow. This of course Mackenzie indignantly denied. Quoting from Sir Felix Semon's memoirs, Virchow's report corroborated Mackenzie's opinion upon the particles removed in the second operation. In spite of the most careful examination no single portion was detected which had been pathologically changed sufficiently to make this worth mentioning. In this operation a more central portion of the growth had been gripped, the healthy condition of the tissue close to the cut permitted a favorable prognostic opinion. Whether such an opinion would be justified concerning the whole malady cannot with certainty be determined from the two extirpated pieces. In any case there is nothing present in them that could arouse suspicion of further or more serious disease.

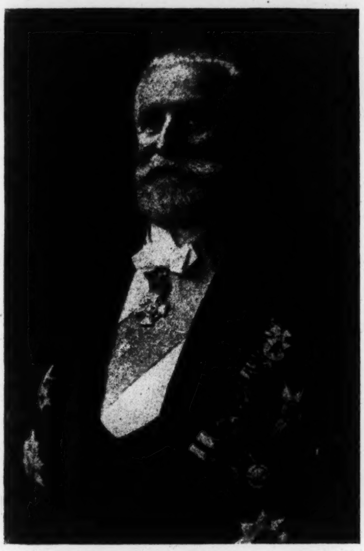

FIG. 6. VON BERGMANN, CONSULTING SURGEON IN THE CASE OF THE CROWN PRINCE.

As the Crown Prince was eager to take part in the Jubilee of Queen Victoria the scene is now transferred to England. Mackenzie was anxious to have him remain in England so that he could watch carefully the progress of the disease, and treat him accordingly. This aroused the ire of the Germans at home but the Crown Princess had her way and in England he stayed, increasing her growing unpopularity in Germany, and it is here the perfidious machinations of Prince William come into marked evidence. His inordinate ambition, his unfilial attitude toward the Crown Prince and his brutal treatment of his mother enabled him to form his own party in Berlin, backed by Bismarck and the crowd which afterward became the War Party, and also enabled him to influence the enfeebled old Emperor and assume the duties of the Crown Prince.

FIG. 7. SIR MORRELL MACKENZIE, EMINENT LARYNGOLOGIST OF LONDON.

A change of climate was thought desirable and the imperial patient was removed to Toblack in the Tyrol and Mark Hovell placed in charge of the case during the absence of Mackenzie in London. Owing to the inclement weather at Toblack he was removed to San Remo. Up to this point the optimistic prognostications of Mackenzie, backed by the favorable reports of Virchow, seemed justified. Suddenly after his arrival at San Remo a change for the worse occurred and Mark Hovell sent immediately for Mackenzie, who realized the case was more serious than he supposed. He was asked by the Crown Prince if he thought the disease was cancer and Mackenzie replied, "Sir, I am sorry to say it looks very much like it."

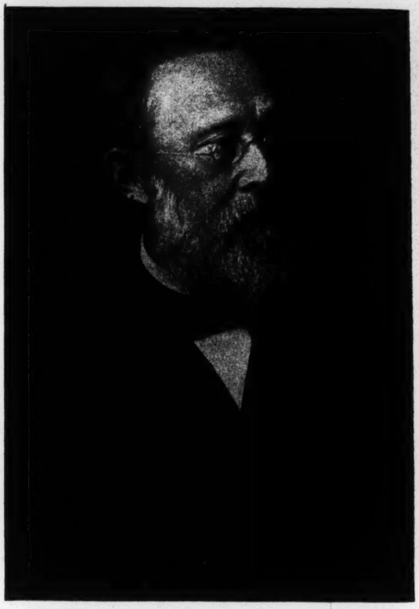

FIG. 8. PROFESSOR VIRCHOW, RENOUNED GERMAN PATHOLOGIST.

A consultation was held with Mackenzie, Schrotter, Moritz Schmidt, and Krause, with the result that the Crown Prince was given the choice of the removal of the larynx or the more palliative operation, tracheotomy.

On February 9 Dr. Bramann, assistant to von Bergmann, in the presence of Mackenzie, Mark Hovell, Krause and Schrotter, performed a successful tracheotomy. The news of this operation set Berlin in an uproar. The anti-English party, taking up the squabbles of the medical men, accused the Crown Princess of employing a quack to take care of her husband and discrediting the German doctors in order to enable the Crown Prince to become Emperor and she the Empress of Germany.

The feeling in Germany was intense against Mackenzie, and the German propagandists in England even turned his own countrymen against him. Mackenzie, replying to the assaults made upon him, said: "I relied upon the findings of the leading pathologist in the world, Virchow, who reported he found no indication of malignancy in the specimens examined by him and predicted a favorable outcome of the case." Emil Ludwig, having only the German doctors' evidence before him, took their side of the case, to the detriment of Mackenzie, who with the reports of Virchow refused in the beginning to acknowledge the growth was malignant in character.

On March 9 the old Emperor died and Frederick became Emperor of Germany as Frederick III. His first act as Emperor was to invest his consort with the Ribbon of the Black eagle and he greeted Mackenzie with the words, "I thank you for having made me live long enough to recompense the valiant courage of my wife."

How much the early treatment of Gerhardt in cauterizing this growth with the galvanocautery had to do with changing a benign into a malignant growth no one can tell. Any one with experience with laryngeal growths can readily realize how difficult and at times impossible it is to differentiate between a benign and a malignant growth, and Mackenzie took the right course in the treatment of this case, especially when backed by such an authority as Virchow. Mackenzie's mouth was sealed for state, personal, and professional reasons, and he died some time after this tragedy still discredited in Germany and in his own country. Mackenzie paid the penalty of the position he occupied in this case and I have never known of a doctor who has had the responsibility of the life of a public man who has not been unjustly criticized.

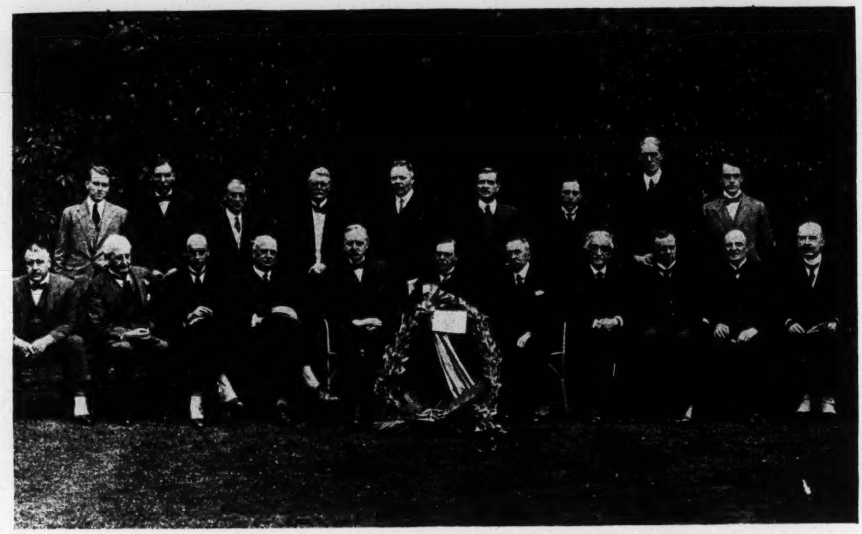

FIG. 9. MACKENZIE WREATH AND MEMBERS OF THE LONDON LARYNGOLOGICAL SOCIETY.

Some years after the death of Emperor Frederick, the London Laryngological Society, realizing the deep injustice they had done Mackenzie, decorated his grave, a very belated honor, and the Marble Cross bears the following inscription:

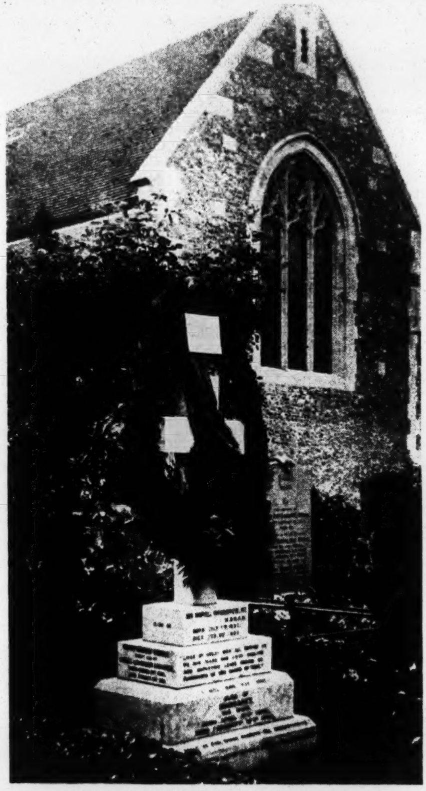

Fig. 10. Mackenzie Memorial.

Sir Morrell Mackenzie, kt., m. d.

Lives of great men all remind us,
We can make our lives sublime,
And departing leave behind us,
Footprints on the sands of time.[24]

With an unfortunate turn of the wheel to the left the German ship of state went eventually on the rocks. Had the health of Frederick permitted and could he have returned to Berlin his old time popularity with his people would have returned and we probably would have been spared the terrible catastrophe which has overwhelmed the world. Before closing the story of this tragic case, Virchow in 1860 showed a case before the Berlin Medical Society which he described as pachydermia laryngis, and in 1887 he reported on the pieces of growth removed from the larynx of the Crown Prince, and was led to believe this might be a case of pachydermia laryngis which he described as a hyperplasia of the epithelium over the processes vocales. He laid down the dictum that there is a sharp line of demarcation between benign epithelial hyperplasia and the stroma, and anything of an epithelial nature below this line and unconnected with it is at least of a suspicious nature.[25]

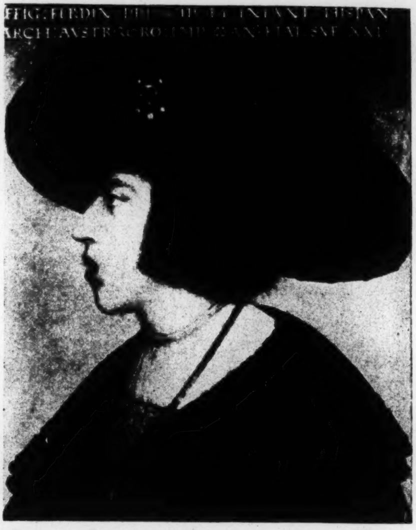

Fig. 11. Sixteenth Century Adenoid Type.

That the tonsils and adenoids have been studied histologically and pathologically and also from the surgical standpoint for many years is evident from the volumes written on the subject. There is no doubt about the existence and pernicious influence of this nasopharyngeal growth from the earliest times, and a striking illustration is the case of Don Fernando,[26] Infanta of Spain, son of Philip IV, born in 1609.

Rapp,[27] an early anatomist, made a comparative study of the tonsil in 1839. F. J. C. Mayer[28] in 1842 described the tissue of the pharynx as a bursa. Kolliker[29] in 1852 described the faucial and lingual tonsils. Luschka[30] in 1868 described the median and lateral recesses of the pharyngeal tissue as folds which became known as Luschka's tonsil.

George Catlin,[31] a native of Pennsylvania, civil engineer, and a noted painter of the American Indian, was the first in America to call attention to mouth breathing. His article published in 1862 on the "Breath of Life, Mal Respiration and Its Effects on the Life of Man" is highly prized in the collection of the Library of the Surgeon General, U. S. A.

Wilhelm Meyer of Copenhagen[32] published his observations on the hypertrophy of the post-nasal lymphoid tissue and read a paper in 1870 in London on "Adenoid Vegetations in the Naso-pharynx." That a condition so long in existence should have been so slowly recognized is remarkable, especially as Czermak, Semeleder and others had been experimenting years before it was left to Meyer to describe the adenoids. Not being an adept with the mirror he used his fingers in locating and describing this condition. His description was so accurate that there has been little left for later observers to dilate upon. Thus did Wilhelm Meyer confer an inestimable boon on suffering humanity and furnished a subsequent generation of rhinologists with sources of income which redound to the glory of laryngology and rhinology. A statue to Wilhelm Meyer has been erected in Copenhagen, the gift of professional admirers and grateful patients.

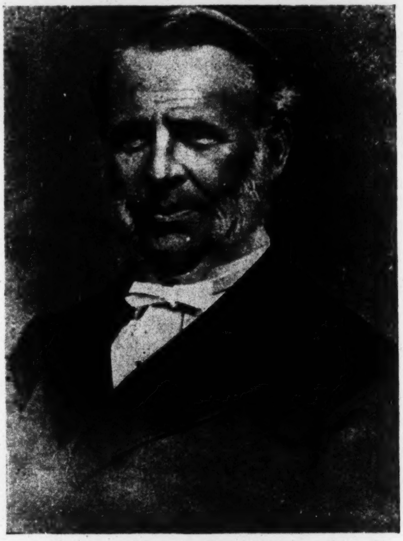

FIG. 12. WILHELM MEYER, COPENHAGEN, 1870, FIRST TO DESCRIBE ADENOID GROWTHS.

Tornwaldt[33] in 1885, basing his opinions on the findings of the earlier anatomists, claimed the pharyngeal tissue was the seat of postnasal catarrh, which is still spoken of as "Tornwaldt's disease."

Waldeyer[34] in 1884, described the lymphoid tissue, viz.: the lingual, the faucial, the orofaucial and the nasopharyngeal, called Waldeyer's ring, and stated that it can take up any infection, but that the faucial tonsil is the worst offender.

Guye of Amsterdam[35] in 1884 emphasized the importance of the effects of adenoids on the mental and physical development of children to such an extent they cannot fix their attention on any subject, making them backward at school, as well as undernourished. He might have added their pernicious influence on the ear, for many cases of deafness in the child have their beginning in neglected adenoids. Guye described this condition as aprosexia, or a wet blanket on the brain. His publication appeared in French, German and English.

Zuckerkandl[36] in 1887 pointed out the danger of hemorrhage following tonsillectomy. If he were alive today and could visit some of our clinics he would find justification for his caution against hemorrhage following this operation.

We all have our favorite method of removal of the tonsils, but the most brutal and unsurgical method is that known as the finger operation, in which the tonsil is torn away from its bed by means of the finger and with volsella forceps torn from the fossa. This method has been responsible for the most serious sequelae following this operation, such as hemorrhage, pneumonia, abscess of the lungs and empyema. If greater care by the surgeon were exercised in the way of preoperative care such as an examination of the general physical condition and the coagulability of the blood, less trouble would result following this operation. There was and still exists a feeling among some that the removal of tonsils is followed by sterility, and that the lymphoid tissue in the pharynx and nasopharynx are a protection to the individual.

Goodale[37] in 1897 by his experimentation proved the absorptive power of the tonsil by injecting carmine in the crypts of the tonsil which was seen to pass in the underlying lymphoid tissue. This gave support to previous clinical and pathological observations.

Diphtheria has been the dreaded disease of humanity from the earliest times. The Jews used to announce the appearance of this disease by blowing a horn, warning the people to keep away. Today we practice isolation and placard the locality of the afflicted one with this affection.

In 1807 a severe epidemic with many fatalities in Tours led Napoleon to offer a prize for the best essay on the disease. It was not until Bretonneau's[38] publication in 1826, in which he reported an operation to relieve obstruction in breathing, that any great advance was noted and his work is a landmark in the history of this disease.

The germ theory of Pasteur led to the development of bacteriology, through which the discovery of the tubercle bacillus by Koch, and the bacillus of diphtheria by Klebs and later described by Loeffler,[39] were instrumental in separating the types of the infections of the upper air passages. This was in 1884.

While the discovery of the diphtheria bacillus was made by Europeans, an American, the elder Shurly[40] of Detroit, advanced the theory in 1879 that diphtheria was a germ-borne disease.

Everlasting honor is due another American, Joseph O'Dwyer,[41] who saved countless lives by revolutionizing the treatment of diphtheria by the introduction of intubation in stenosis of the larynx and other conditions causing obstruction to respiration. In 1885 the account of his long and persistent endeavors was published. Desault[42] in the latter part of the eighteenth century had passed hollow tubes into the larynx, giving temporary relief to dyspneic patients. The tubes, which must have been made of rubber, were passed through the nose. This method, although practiced by other surgeons of this time, did not become popular and did not displace tracheotomy, which had been practiced and extolled by Trousseau. The use of intubation tubes as practiced by O'Dwyer became very popular and the discovery of O'Dwyer was the forerunner of bronchoscopy.

Roux and Yersin[43] in 1888 extended our information regarding diphtheria. After several years of investigating the diphtheria bacillus and its antitoxins they laid the foundation for the development of an immunizing serum by Behring,[44] E. Frankel,[46] and Roux and Martin.[46] This serum has been so perfected that it is in general use today and has been the means of saving innumerable lives, and its introduction in laryngeal diphtheria has diminished the number of cases of laryngeal diphtheria demanding intubation.

It has been stated that diphtheria has followed the removal of tonsils. This probably is true for in these cases the tonsils were carrying the diphtheria infection and when liberated and coming in contact with the raw surface following the removal of the tonsil, a true case of diphtheria developed.

W. H. Park[47] in 1894 published a paper on the bacteria found in the normal throat and their relation to acute inflammations. He demonstrated the various forms of streptococci which seemed harmless in the normal throat, but increased in numbers and virulence during acute inflammations.

Buschke[48] in 1894 stated he believed the tonsils were the portals of systemic infections. No great experience is necessary to have seen systemic infections, such as pleurisy, rheumatism, endocarditis, nephritis, arthritis, and even general pyemia, resulting from tonsillar infections. The tonsils may be the seat of tuberculosis and syphilis.

Vincent[49] in 1898 demonstrated a form of angina in which he found a distinct form of fusiform bacillus and spirilla. This form of inflammation bears the name of Vincent's angina.

A diseased tonsil is certainly a menace, and the character of the infection can only be determined by cultures made from the secretions taken from the tonsil. A patient with infected tonsils may be immune from a general infection but at the same time be a menace by carrying this infection to others. We have only to look back on some of the severe outbreaks of pneumonia followed by empyema in the training camps during the preparation of our troops for our entrance into the World War. Outbreaks of catarrhal inflammations of the upper air passages, measles and scarlet fever were followed by pneumonia and empyema. It was believed that these complications resulted from a descending infection from diseased tonsils. This led Colonel Henry J. Nichols and myself[50] to investigate this subject thoroughly and we found many of the recruits upon examination were carriers of a streptococcic infection in one or more of its types. While these cases were immune as far as the individual was concerned, as soon as they were assembled in crowded camps the infection spread rapidly, resulting in many cases of streptococcus pneumonia. It was the rule at Walter Reed General Hospital to culture the tonsils of patients, and if found to be carriers they were immediately isolated, their tonsils removed, and they were not allowed to return to their camps until all evidences of infections of the upper air passages had entirely cleared. We feel that if this routine had been carried out earlier, many cases of pneumonia and empyema would have been prevented.

A notable advance previously made in the technique of treatment of the throat was that by Dr. Louis Sass,[51] an American, who devised the spray apparatus in 1872.

Francke Huntington Bosworth,[52] another American, became known as a pioneer of Rhinology. In 1881 he published his first extensive work on rhinology in this country or abroad. He invented the nasal saw for the removal of septal spurs which overcame many nasal obstructions. While the removal of spurs from the septum gave great relief still it did not correct deflected septa, and Dr. Morris Asch[53] with his stellate punch was able to correct many of these deflections.

Emil Mayer and John Roe[54] of Rochester, N. Y., were the first to advocate the submucous resection of the nasal septum. Roe was a master of correcting deformities of the nose and justly enjoyed a great reputation in this field.

Dr. W. C. Jarvis,[55] American and pioneer rhinologist, devised a snare useful in removing nasal polypi. He made valuable contributions on the subject of paralysis of the vocal cords.

Carl Koller of Germany[56] in 1884 discovered the possibilities of using cocaine surgically. Its use in this specialty was introduced by Jelinek.[57] Three great events in the history of laryngology and rhinology after the discovery of the vocal cords by Manuel Garcia are the demonstration of the utility of the laryngoscope by Turck and Czermak, the observations of adenoids by Wilhelm Meyer, and the advent of cocaine.

Thomas R. French of Brooklyn[58] was one of the earliest to call attention to the fact that the lymphoid tissues of the throat harbored other infections than the tonsils. In 1883 he was the first to develop the art of photographing the larynx and he wrote extensively on sound production.

After the beginning of the development of modern rhinology in the early eighties, interest was aroused in the subject of the accessory sinuses.

Zuckerkandl[59] in 1882 published his work on the anatomy of the accessory sinuses of the head. Then followed Onodi[60] with more extensive anatomical description of the accessory sinuses. Interest was soon aroused in America and Dr. J. H. Bryan[61] in 1889 read a paper before the American Medical Association on the subject "Diagnosis and Treatment of Abscess of the Antrum of Highmore." The transition in the treatment of maxillary sinus disease from the time of Cowper who extracted a tooth and drilled an opening through the alveolus into the antrum, to the operation of Caldwell-Luc, through the canine fossa with a counter-opening through the nasal wall into the nose, demonstrates the remarkable progress made in the surgery of this cavity.

Transillumination was first practiced as a diagnostic aid in recognizing sinus disease. While it is valuable in determining diseased conditions in the anterior sinuses, it is valueless in determining pathological conditions in the posterior sinuses. Inestimable value has been rendered this specialty by Mr. Edison in the electric light, which enables us to have a better view of the cavities of the head and other parts of the body.

The whole world was astonished in 1895 by the discovery of the *x*-ray by Roentgen.

Max Scheier[62] in 1896 made one of the earliest contributions on the value of the *x*-ray in diagnosing sinus disease. His pictures were not perfect, and not convincing, but since the development and perfecting of the *x*-ray machine, a remarkable advance has been made, clearer pictures are taken, and we are now able with a fair degree of accuracy to determine the pathologic conditions in the nasal accessory sinuses; yet roentgenology should not be relied on entirely at the expense of clinical symptoms.

The discovery of radium a few years later (1910) was announced by Madame Curie, and Dr. Robert Abbe[68] of New York was the first to use it in this country in the treatment of intralaryngeal growths.

In 1894[64] I operated on a case of abscess of the frontal sinus, from Santa Cruz, West Indies, and referred to me by Dr. Wm. Holland Wilmer. I employed the method of Ogston, an English surgeon, and modified by Luc of Paris, known as the Ogston-Luc operation. This I believe was the first recorded case of the external operation on the frontal sinus in this country. The Ogston-Luc operation was faulty, owing to the impossibility of maintaining drainage through the frontonasal duct, and not removing the fronto-ethmoidal cells which were in nearly all cases involved, thereby bringing about a reinfection of the frontal sinus. The tendency to a recurrence after operation on the frontal sinuses by this method caused the Ogston-Luc operation to be abandoned.

Kuhnt in 1895 devised an operation in which the whole anterior wall of the sinus was removed, but owing to the flattening-over of the sinus and the great deformity resulting, it met with little favor.

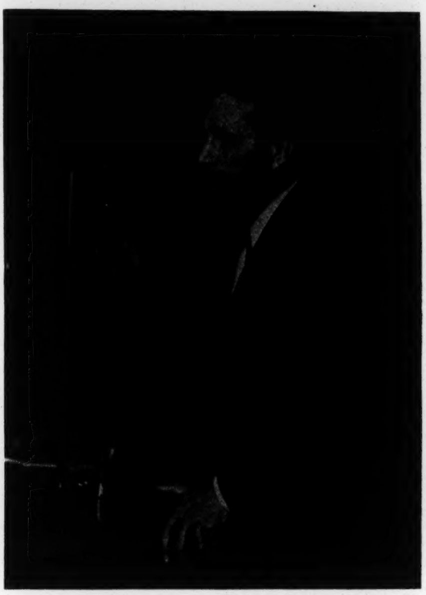

FIG. 13. ROENTGEN WITH HIS X-RAY, 1895.

Killian in 1902 devised his method which was a modification of that by Kuhnt. While an improvement, it nevertheless produced objectionable deformities. He made his incision through the eyebrow from the inner angle to the outer angle of the orbit, stripping the periosteum above and below the orbital ridge. He then removed the greater portion of the external wall and the floor of the sinus, leaving a bridge which prevented a complete sinking of the skin over the sinus. He then pressed the tissue down over the sinus firmly against the posterior wall of the sinus, trying to obliterate the cavity. The patients I saw in Killian's clinic were not pleasing to look at, and not many Americans would submit to such mutilations.

A still further modification of the Killian operation offers the best results with the least possible deformity, and that is carrying the inner end of the incision well down on the nose, stripping the periosteum and resecting the bone and the nasal process of the superior maxilla. We are thus enabled to remove the floor of the sinus and make a complete exenteration of the ethmoid cells as far back as the sphenoid, and if this is diseased the anterior wall can be removed and perfect drainage established. By this method all diseased bone can be removed from the frontal, the ethmoid cells, as far back as the sphenoid, and that cavity can be brought into complete view so that as much bone can be removed as necessary with the greatest safety. This operation, while rather formidable, and while it should only be performed by one who knows the anatomy of the parts, and who is also skilled in surgery, has given me the best results with at times almost no deformity. Owing to the bad results following the external operation on the frontal sinus by unskilled operators there has been a tendency towards the more conservative method of operating on these conditions by the endonasal method under local anesthesia. While I grant that acute, subacute, and even chronic abscesses of the frontal sinus can and may be relieved by this method, nevertheless if there is extensive bone disease we necessarily resort to external surgery. That a disease of the upper sinuses, that is the frontal, ethmoidal, and sphenoidal cavities, is a serious condition no one can deny, and it should be treated conservatively if possible, and if not, radically.

In the *Transactions of the American Laryngological Association* in 1905 a valuable account is given of surgical methods used in diseases of the sinuses.

Complications of sinus disease are frequent, such as meningitis, abscess of the brain, orbital abscess, osteomyelitis, and neuroretinitis. I have met with all these complications.

In 1911[65] I read a paper before the Congress of Clinical Surgeons of North America on the "Relation of Diseases of the Sinuses to the Diseases of the Eye." Dr. Wm. H. Wilmer, his associate, Dr. Louis S. Greene, and I worked over this subject very thoroughly some years before. In this article were reported various complications of the eye, resulting from sinus disease, such as narrowing of the fields of vision, and enlargement of the blind spot. This was one of the earliest observations of these complications reported in this country.

Dr. John N. Mackenzie,[66] a student of Morrell Mackenzie, and a brilliant laryngologist of Baltimore was a pioneer investigator of laryngeal and nasal neuroses. He was the first instructor in laryngology in the Medical School of the Johns Hopkins University.

Dr. Jonathan Wright,[67] linguist, pathologist and historian, contributed greatly to the study of laryngology and rhinology by his writings. He was a descendent of a prominent Quaker family in Pennsylvania and lived for many years in Brooklyn and New York. The memorial addresses by Drs. Harmon Smith, Thomas J. Harris, and Charles J. Imperatori are excellent tributes to his ability and remarkable talents.

From the days of Philip Syng Physick, Father of American Surgery, it can be seen that America has contributed largely in the development of this specialty.

References

1. Mackenzie, M. Diseases of the Throat and Nose. London, 1880, 1: 219.
2. Physick. A Memoir of the Life and Character of Philip Syng Physick by Jacob Randolph, M.D. Phila., 1839.
   Middleton, W. S. Ann. Med. Hist., n. s., 1: No. 5, Sept., 1929.
   Tonsillotome: See Mackenzie, 1: 27.
3. Cheesman. *Trans. Physico-Med. Soc.*, N. Y., 1: 413, 1817.
4. Green: A History of Laryngology and Rhinology by Jonathan Wright. Ed. 2, Phila., Lea & Febiger, 1914, p. 202.
5. *N. York M. J.* 4: 316, 1867.
6. Trousseau and Belloc. *Bull. de l'Acad. Imper. de Méd.*, 24: 101, 1858. Trousseau admitted that to Horace Green belongs the honor of having methodically and systematically treated the larynx. *Trans. A. M. A.*, 1852–1853. See also Mackenzie,[1] p. 300.
7. Cit. *Trans. Am. Laryngol. Assoc.*, Fiftieth Annual Meeting, 1928, p. 274. Historical Address of J. Bryson Delavan.
8. Buck. *Trans. A. M. A.*, 1853.
9. Garcia. Citation sur l'invention du laryngoscope, by Parlin Richard, Paris. See M. Garcia's letter to Dr. Larry dated May 4, 1860, p. 12, Richard's pamphlet. *Proc. Roy. Soc. London*, 7: No. 13, 1855. *Philosoph. Mag. & J. Sc.*, 10: 218. *Gaz. Hebdom. de med. et chir.*, Nov. 16, 1855, No. 46, given by Wright, p. 207.
10. *Trans. 17th Med. Cong. London*, 3: 197, 1881. Excerpt: The historical evolution of oto-laryngology, by St. Clair Thomson. *Proc. Roy. Soc. Med.*, Lend., 24: (Sect. on Hist. of Med.), 30–36, July, 1931.
11. Turck: Klinik der Krankheiten des Kehlkopfes. Wien, 1866
12 Czermak: *Wien. Med. Wchnschr.*, Mar. 27, 1858.
13. Mackenzie, M. *Proc. Roy. Coll. Surg.*, 1863–1865.
14. *Bull. N. Y. Acad. Med.* 1: 156, 1861.
15. Voltoline and Semeleder. See Wright,[4] p. 211.
16. Lewin. *Allg. Med. Central Zeitung*, Oct. 12, 1861.
17. Cohen. See *Med. Rec.*, N. Y., 1866; *Am. J. M. Sc.*, Apr.-Oct., 1867.
18. Lefferts *Medical Record*, N. Y., 1876.
19. Elsberg: *Trans. Am. Laryngol. Assoc.*, 1: 33, 1879.
20. Textbooks, journals and full list of societies: see Catalogue of the Library of the Surgeon General, under Laryngology and Rhinology.
21. Wagner. *Trans. Am. Laryngol. Assoc.*, p. 282, 1928.
22. Mackenzie. See Wright,[4] p. 216.
23. Crown Prince and Princess of Germany. Tragedy of 1887 discussed in book by Sir Frederick Ponsonby, Letters of the Empress Frederick of Germany. London, Macmillan, 1929.
24. Grateful acknowledgment and appreciation to Irwin Moore of London is given for the photographs showing a part of the memorial services in London to Sir Morrell Mackenzie, K. T. M. D.
25. Pachydermia Laryngis: Illustration by Mr. E. D. D. Davis, London. *Proc. Roy. Soc. Med.* Section of Laryngology, 24: 1, 1931.
26. Don Fernando: Photograph from the collection of the author, Dr. J. H. Bryan, recently presented to the Welch Library, Johns Hopkins University, Baltimore.
27. Rapp: *Müller's Arch. f. Anat., Physiol.*, Jahrg. 1839, p. 189.
28. Mayer, F. J. C. Neue Untersuchungen ans dem Gebiete der Anatomie und Physiologie. Bonn, 1842.
29. Kolliker. Mikroskopische Anatomie. Leipzig, 1852, 2: 41.
30. Luschka. Der Schundkopf des Menschen. Tubingen, 1868, p. 110.
31. Catlin. The Breath of Life, Mal Respiration and Its Effects on the Life of Man. 75 pp. London, Troubner, 1862. This monograph is bound in the Book Sanitation, Library Surgeon General, U. S. A.
32. Meyer, Wilhelm. *Med.-Chir. Trans.*, 53: n. s. 35, 1870.
33. Tornwaldt. Ueber die Bedeutung der Bursa Pharyngea. Wiesbaden, 1885.
34. Waldeyer. *Deutsche med. Wchnschr.*, 10: 313, May 15, 1884.
35. Guye. *Fifth Internat. Congr. Hygiene & Demography*, 11: 120.
36. Zuckerkandl. *Wien. med. Jahrb.*, No. 6, 309, 1887.
37. Goodale. *Arch. f. Laryngol. u. Rhinol.*, 7: 90, 1897.
38. Bretonneau. Des Inflammations et de la Diphtherite. 1826.

39. Loeffler. Veroffentlichungen des Kais. Gesundheitsamtes. 1884.
40. Shurly. *Trans. Detroit M. J., & Lib. Ass'n.*, Feb. 1879, p. 13.
41. O'Dwyer. *N. York M. J.*, 42: 145, Aug. 8, 1885.
42. Desault. Oeuvres chirurgicales de Desault. Ed. by Bichat, Paris, 1798.
43. Roux and Yersin. *Ann. de l'Inst. Pasteur*, 11: 629, 1888.
44. Behring. *Deutsche med. Wchnschr.*, No. 49, p. 1113.
45. Frankell, E. *Berl. klin. Wchnschr.*, No. 49, 1890.
46. Roux and Martin. *Ann. de l'Inst. Pasteur*, No. 9, 1894.
47. Park. *Med. Rec.*, 40: 117, Jan. 27, 1894.
48. Buschke. *Deutsche Ztschr. f. Chir.*, p. 441, 1894.
49. Vincent. *Arch. Internat. de Laryngol.*, 11: 44, 1898.
50. Nichols and Bryan. The tonsils as foci of infection in streptococcus hemolyticus carriers. *J. A. M. A.*, 71: 1813–1814, Nov. 30, 1918.
51. Sass. Illustration in Bosworth: A Treatise on Diseases of the Nose and Throat, N. Y., Wood, 1889, 1: 12; 36–39.
52. *Ibid.* Bosworth's first book was published in 1881. This was followed later by his works in two volumes, 1889. Also: *Med. Rec.*, p. 115, Jan. 29, 1887.
53. Asch. *Trans. Am. Laryngol. Ass'n.*, p. 76, 1890.
54. Mayer and Roe. *Trans. Am. Laryngol. Ass'n.*, 221, 1902.
55. Jarvis. *Trans. Am. Laryngol. Ass'n.*, p. 69, 1882.
56. Koller. *N. York M. J.*, 41: 19, Jan. 3, 1885.
57. Jelinek. *Wien. med. Wchnschr.*, no. 45, 1332, 1884.
58. French. *Trans. Am. Laryngol. Ass'n.*, p. 59, 1883.
59. Zuckerkandl. Normale und pathologische Anatomie der Nasenhohle. 1882, 1892, 1893.
60. Onodi. *Arch. f. Laryngol. u. Rhinol.*, 15: 306, 1904. Die Nebenhohle der Nase beim Kinde, 1911.
61. Bryan. *J. A. M. A.*, Oct. 5, 1889.
62. Scheier, Max. *Arch. f. Laryngol. u. Rhinol.*, 6: 57, 1897.
63. Abbe. *Trans. Am. Laryngol. Ass'n.*, p. 295, 1928.
64. Bryan. A further contribution to the study of suppurative disease of the accessory sinuses with report of cases. *N. York M. J.*, Oct. 12, 1895.
65. Bryan. *Surg., Gynec. Obst.*, pp. 565–578, June, 1912.
66. Mackenzie, J. N. *Trans. Am. Laryngol. Ass'n.*, p. 154, 1887.
67. Wright, Jonathan. *Op. cit.*[4] Memorial Addresses by Drs. Smith, Harris, and Imperatori, *M. J. & Rec.*
68. Grateful acknowledgement is made for the reproduction of photographs herein presented:

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AN INTRODUCTION TO THE HISTORY OF WOMEN IN MEDICINE*

I. MEDICAL WOMEN BEFORE CHRISTIANITY (*Continued*)*

By KATE CAMPBELL HURD-MEAD, M.D.

HADDAM, CONN.

THE HEBREWS AND THEIR MEDICAL WOMEN

Strangely enough, pious Hebrews believed in only one god, the great and powerful Jehovah, and in none of the lesser gods of the Assyrians or Egyptians. From the time that Abraham left Ur there are few allusions to the gods of his fathers, but many instances of the return of the Israelites to their old idols which the prophets deplored.

Of the medicine of the Hebrews much can be learned from the Bible, the Talmud, the Niddah, and other Jewish writings.[1] Since to the Jews was given the injunction to be fruitful and multiply, we may infer the necessity of midwives and pediatrists as well as hygienists. Sanitation and the prevention of disease were as much a part of their religion as obedience to the other laws, and from Genesis to Malachi there are many allusions to the medical care of women and children by women who had been taught by other women of their own country, as well as by students of the schools of Egypt.

Examples of the medical lore of the Bible are found in many of the old Books, such as the following: Prenatal life is described in Job x, 10–12; and Psalms cxxxix, 13–17. The care of infants is discussed in Ezekiel xvi, 4–5. Details as to the stages of labor and the duties of the midwife are told in Genesis xxv, 19–24. The account of Rachel's death when Benjamin was born comes from Genesis xxxv, 17. The names of certain midwives are recorded in Exodus i, 15, where we find that Shiphrah and Puah, being ordered by Pharaoh to kill the male babies at the moment of their birth, answered that the Hebrew women were so quick in labor that the midwife had no opportunity to do this, for the child was born "ere the midwife come unto them," Exodus i, 19.[1] We find that either a nurse or the midwife cut the cord, washed the baby, rubbed it with salt, and then swaddled its body. These midwives were sufficiently quick-witted to frustrate not only the Pharaoh but even Yahweh, or Jehovah, for in Genesis xxxviii, 24, there is told the story of the birth of twins, Perez and Zerah, the sons of Judah. When the midwife found the first hand presenting at Tamar's vulva she quickly tied a bit of red ribbon around its wrist and replaced the hand; then, after certain manipulations, the second baby was born first, but the red ribbon proved the priority of Perez.

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[1] Macht, D. I. Embryology and obstetrics in ancient Hebrew literature. *Johns Hopkins Hosp. Bull.*, p. 143, 1911.

[1] Exodus i, 20: "Therefore God dealt well with the midwives and the people multiplied and waxed mightily."

* To be completed in six parts. Part i appeared in the January, 1933, issue, P. 1.

In the Talmud and Niddah there are discussions of obstetric operations performed by women, among them embryotomy, caesarian section, twin births, the care of the placenta, monstrosities, the death of the mother, menstruation, etc. In the Book of Exodus we turn to Chapter IV, 25, and find that Zipporah, a Midianite, the wife of Moses, circumcised her own son with a flint knife, as she was accustomed to circumcise the babies of others. Midwives also understood the use of the vaginal speculum in uterine diseases, how to perform occipital version—since this was the only proper way of entering the world—and they used probes, scalpels, cauteries, tenacula, in fact, as Sarton says, there is no reference in the Bible to surgery excepting these obstetrical operations, and to the method of bandaging a broken arm (see Ezekiel XXX, 21). Abrahams, on the other hand, says that Jewish medicine was ahead of that of every other country through the most ancient and Middle Ages.[1]

It is not known where all the Hebrew doctors received their medical education, but, as we have seen, Moses studied at old Heliopolis, in Egypt, and as it was a coeducational and priestly school it is probable that Zipporah studied there as well as at Sais. Moses knew all the magic and superstitions of many countries including Babylon. He was a great sanitarian and understood the hygiene of camp life, kept stores of supplies for the people, erected shelters for the workers as well as hospitals for the sick and needy which he called Beth Holem, Beth Said, etc. Neuburger says that both men and women were well trained in diagnosis, were taught when and how and where to bleed their patients, condemned the drinking of wine before the age of forty, and had a long and useful list of remedies for every disease. These may have been Egyptian or Babylonian medicines, for it is said that the Jews developed the prophylaxis of contagious diseases, chiefly leprosy, from the Babylonians. Among their medicines they used mandrake for sterility (as is told in the story of Jacob and the mandrakes[1]), and saffron, camphor, myrrh, cinnamon, senna, balm of Gilead, oil and wine for wounds, aconite and curare for poisons. Healing by hypnotic suggestion was shown in many of the acts of Moses, and of Samuel and Ezra and Solomon, and of Christ and the Apostles, but the Bible is by no means a medical textbook and we may only regret that among the writings of St. Luke there is so little professional lore, although, as Harnack[2] has pointed out, the language and medical terms in the Third Gospel and the Acts show very clearly that St. Luke was, without doubt, a physician.

The Hebrews must have been in constant communication with the Phoenicians and Egyptians, and naturally they had traditions of medical practice among the Assyrians, for they used ancient Babylonian texts, obeyed the Hammurabi code of fees and forfeits, and paid a tooth for a tooth, an eye for an eye that was damaged by the operator. Various organs are mentioned in the Bible showing the anatomical knowledge of the Jews, examples of which we find in Exodus XXIX, 13, concerning the liver; Psalms XVI, 9, on the heart as the "cooking pot"; Daniel IV, 5, 13, as to the head where dreams are made; and Daniel VII, 1, the interpretation of dreams; Deuteronomy XXVIII, 22, concerning tuberculosis or consumption with fever and wasting; Job XVI, 13, on the kidneys and gall bladder; Proverbs VII, a tirade against the sexual diseases carried by lewd women; and I Samuel, XXV, 36–38, apoplexy as the result of drunkenness.

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[1] For references see Sarton's review of James Henry Breasted's book on the Edwin Smith surgical papyrus, *Isis*, 15: 356, 1931. Abrahams, I. Jewish Life in the Middle Ages. 1896, Vol. I. Neuburger, M. Geschichte der Medizin, 1: 318 ff. Carnoly, E. Histoire des Médecins Juifs. 1844. Le Moyne, P. Gallerie of Heroick Women. 1652. Flavius Josephus, Jewish Antiquities, written in A.D. 93, translated by William Whiston, ed. 1737.

[1] Frazer, J. G. Jacob and the mandrakes. *Proc. Brit. Acad.*, vol. 3, 1917.

[2] Harnack, A. Luke the Physician. Trans. by J. R. Wilkinson. 1907.

Although it has been said by eminent Jewish scholars that the first nation to subordinate women was that of the Hebrews, it is nevertheless true that even though considered menials, women were taught to be not only midwives but priestesses and seers, barbers, surgeons, anatomists and teachers.

Women must have sometimes been honored like men because of their good works, as we read in that refreshing chapter of Ecclesiasticus XXXVIII, but however useful the exceptional and learned wife or physician-midwife, she was quickly divorced or killed for infidelity, usually regarded as a minor or a slave, and always subject to her husband or father. It seems quite modern to find that the learned Vashti gave up a royal throne because of independence and innate modesty, that an uneducated woman like Esther ruled a stubborn king like Ahasuerus by her tact and beauty, and that the medical or political advice of Deborah[1] was considered as valuable prophesy as that of the holy men. Evidently some women had the courage of their convictions and studied what they pleased and practiced medicine so commonly that they were not considered exceptional and their names were not even mentioned as doctors. We do find, however, that St. John, in his letters, wrote to "the elect lady" as he did to men, and "angels," and churches; and that St. Paul advised some of his own relatives from Tarsus, to relieve the afflicted through good works, but "in quietness," a most significant word to us. These women and a few others whom he knew in the church are known to us by name, Zenais, Philomela, Tryphaena, Tryphosa, and Persis, and we also recognize Julia, Olympias or Olympas, and Phoebe, as deaconnesses, for they too were to be "helpers of many" since there should be no male or female in the church. What St. Luke thought of medical women is not revealed in his Gospel, but doubtless he had charity to all and was ready to consult with them in time of need.

It would be interesting to know what was done by medical women during the great epidemics of plague, when, for instance the army of Sennacherib was destroyed in one night and even the trappings and saddles of the horses were eaten by rats which evidently carried the bubonic plague wherever they rioted. It is said that there were 1500 outbreaks of pestilences in various districts of Judea during the lifetime of Christ, and that 10,000 people died in Palestine during the reign of Titus from some epidemic or other. We also wonder what was done for Job and whether he had boils, or syphilis, or smallpox, or eczema, and why the Hebrews associated certain diseases with goats and mice, and why, as in 1 Samuel, VI, 4, the people offered to the God of Israel five golden tumors and five golden mice, "for one plague was on you all," and when the wife of Phineas died in convulsions in childbirth, was it because of fright because the Ark of God was stolen or the plague from which her father-in-law and husband had died, or was it from nephritis?

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[1] Women were doctors, midwives, nurses and rulers. Deborah sings

"Without or guard or forts I was secure;
I did not make my subjects' necks endure
The yoke of citadels; but having gain'd
The affection of their hearts, I freely reign'd."

Pierre Le Moyne (Gallerie of Heroick Women, 1652, p. 6) says: "If we consider what was done under Deborah of Judea . . . we will confess that such miracles are wrought under the government of women as have not been done under that of men."

Many other such questions may be asked even though there is not as yet an answer forthcoming. Perhaps archeologists may sometime find bricks or tablets to amplify our history of the Hebrew women in medicine. It is clear, however, that while it was not considered by any means impossible for Jehovah to ease the pain of childbirth, there must have been much reliance placed upon the midwife who was undoubtedly as well trained in woman's diseases and general medicine and the treatment of cases of the plague,[1] and in surgery as the men doctors of her time.[2]

And so, though not satisfied with our medical gleanings from Biblical fields we must leave the Holy land with its great history, its healing fountains, its prophets and seers, its midwives and deaconnesses, and realize that though few men or women physicians or midwives were honored by name there were many of them in every community, for "verily the Lord created them."

GREEK MEDICAL WOMEN AND THEIR ENVIRONMENT

Whether or not we are by this time convinced as to the priority of Assyrian or Egyptian medicine we must now turn to a study of the Greeks in order to see why they rapidly superseded the rest of the world by means of their early scientific investigations.[1] It was the Greeks who furnished the elements of physiology, pathology, symptomatology and nomenclature, if not of anatomy and obstetrics.

We have already found that the Egyptians, from their custom of mummifying the dead, studied anatomy much earlier than the Greeks, and they had a long list of household remedies for various diseases along with their religious hocus-pocus, and, moreover, they had no little surgical technique. But by 1000 B.C. the contemporary Greeks had much more of what we call culture than was common to the Egyptians. The Hellenic mastery of art, architecture and poetry was far greater than that of any other nation, but for the actual teaching of anatomy and midwifery the Greeks, like the Hebrews, turned to the schools on the Nile.

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[1] Bombaugh, C. C. Plagues and pestilences of the Old Testament. *Johns Hopkins Hosp. Bull.*, No. 32, 1: 63, 1893.

[2] From Sarton and others we gather the following short but pertinent chronology:

Moses, recently assigned to the period of Hatshepsut, of Egypt, about 1500 B.C.
Hosea, the Hebrew prophet, about 730 B.C.
Isaiah, the Hebrew prophet, about 740 B.C.
Hezekiah and Sennacherib about 720 B.C.
Jeremiah, about 626 B.C.
Zoroaster, the Persian, 7th century B.C.
Sappho, the Greek, fl. about 600 B.C.
Hippocrates, the Greek, died 377 B.C.

[1] Singer, C. A Short History of Medicine. 1928.

In writing of the evolution of medicine, Baas[1] says that both the oldest surgical technique and the beginnings of scientific therapeutics came from Greece and were in the hands of women, as were the treatment of eye diseases and the care of women in labor. As time went on, women did the surgery too, but, unfortunately, when general culture increased women became less capable of medical work and these arts were taken over by men, or, as he puts it, "leider" the goddess midwife died.

In the matter of gods,[2] however, the Greeks refused to believe in the animal-headed gods of their eastern neighbors and invented many anthropomorphic deities of their own, although the snake was even there regarded as the symbol of infinite medical wisdom. Goddesses of healing were very numerous, and while the feminine gods were generally gentle, sympathetic, and careful not to injure mortals, the most powerful gods were masculine and far more often angry, resentful, harmful and cruel than their consorts.

With a little license we may assume that the gods and goddesses had human prototypes to account for their very human attributes. Hera or Demeter as the wife of Zeus was queen of heaven and the medical caretaker, *par excellence*, of women and children. Her daughter Koré or Persephone learned to be equally skilful in relieving pain, curing sore eyes, and soothing the toothache of children. In the Thebes Museum there are numerous tablets extolling the medical work of Demeter and Persephone signed by grateful patients, 3000 years ago, and in the British Museum there is a seated statue of Demeter, from Praxiteles or his school, with a far-away look in her eyes as she searches for her lost daughter, but meanwhile she accepts votive offerings of little marble pigs brought to her by other women.

In honor of these two gods, in the old days, there was a great time of festivity in the spring when the people of Athens celebrated their rites by walking out to Eleusis, fifteen miles away, along the Via Sacra, a dusty road even now. Across the Bay of Eleusis they also came in throngs, men, women and children, singing as they rowed over the water on their annual journey to the temple to pray to Demeter for health and prosperity in the coming year. The precincts of Eleusis, on its hillside, with its white marble buildings shining in the sunlight must have been very beautiful and almost dazzling under the blue Attic sky. There were long, pillared halls for the transaction of business or for rest, theaters and gymnasia, temples and altars, all of which in the minds of the excited people must have produced a great psychic effect. There, along with Demeter and Persephone, were to be found other medical gods, Diana or Artemis, and Eleithyia, forming a famous group of specialists in diseases of women and children. Eleithyia was the chief midwife of the gods, and it was she, high up on Mt. Kynortion above Epidaurus, who attended the maiden Koronis when the baby Esculapius was born. Pindar (522–443 B.C.) calls her the "daughter of powerful Hera that dost cheer the laboring birth." Eleithyia is pictured on the east pediment of the Parthenon as she waits for the birth of Athena as of a human baby, her left hand on the patient's abdomen, her right hand raised in prayer, while the other gods rush to see the miracle of the actual birth of Athena from the head of Zeus. If Eleithyia had been in a bad mood she would have been clasping her own knees and paying no attention to her patient. Thus she compelled Leto to bear her pains for nine days before the twins Apollo and Artemis were born, and because of jealousy she delayed the birth of Hercules and then cursed him with epilepsy or periodic insanity, so like mortals were the ancient gods. However, Eleithyia, in repentance, gave to Hercules the power of preventing disease and warding off the plague, and she taught him how to clean the Augean stables, the breeding place of flies, and to dry the malarial marshes where the miserable quartan fever originated. She dulled the pains of Semele when the infant Dionysus was born, that jolly god of mirth and drunkenness who was also a physician. In the British Museum we may see not only the beautiful though sadly broken frieze of the Parthenon but also from another source a large marble panel on which in relief is Dionysus (Fig. 17) the physician, visiting a patient; servants remove his cloak, musicians celebrate his visit, the house is garlanded for the occasion, and the patient rises from his outdoor couch to salute the doctor, and points to the altar on which an offering is burning. Thus we infer that even in mythology the physician in Greece was treated with great consideration while the patient was actually in pain, and it is evident that Eleithyia herself must have been as welcome at the home of a woman in labor.

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[1] Baas, J. H. Grundriss der Geschichte der Medicin. 1876, p. 5.

[2] Farnell, L. R. Outline History of Greek Religion. 1921.

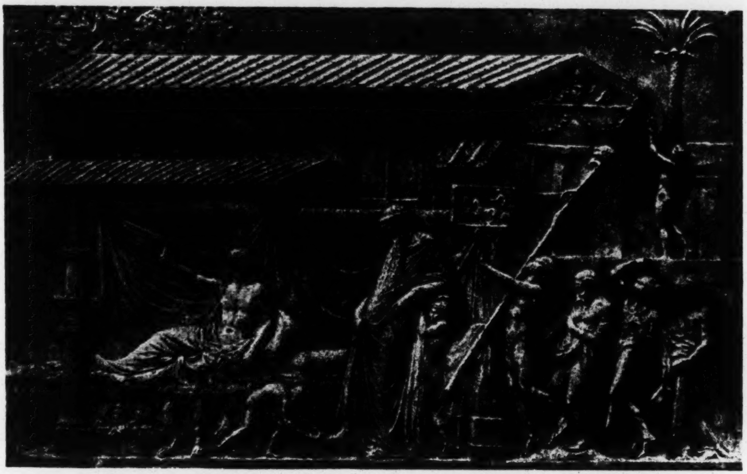

FIG. 17. DIONYSIUS VISITS A PATIENT. (BRITISH MUSEUM.)

Hera, or Demeter, had another daughter named Genetyllis, also a medical goddess, to whom many an altar was erected in Greece. To them came women who wanted babies. She is represented as wearing a long chiton, girdled with a cord, and she carried a torch, the symbol of midwives for centuries. Many such marble figures in relief or in the round, with their symbols and their servants, are seen in the museums of Greece as well as at Eleusis, some of them votive offerings from grateful patients who are seen kneeling before the goddess as if in labor, and presenting to her a wreath of olive leaves. The fees of these goddesses were large, collected before the patient was cured, and many of them were accompanied by a signed testimonial of the wonderful recovery.

At Delphi, Rhea, the great mother of the gods, was worshipped along with Apollo. Rhea was the wife of Chronos, Old Father Time, and she has been identified with Ge, or Gaia, the earth goddess called Kybele or Cybele by the Phrygians and was said to have come from Crete with healing medicines. Rhea's medical partner was Themis or Artemis (or Diana), sister of the medical Apollo, who was also a goddess of childbirth. These medical goddesses again show the probable reality of women doctors even in the hazy prehistoric times. At Delphi, where a great festival was held every ninth year, on a high plateau of Mount Parnassus, Rhea and Artemis were worshipped along with Apollo, as were Demeter and her children at Eleusis. There is no lovelier spot on earth than this hillside 1700 feet above the blue waters of the Bay of Corinth, amid hoary olive trees and dashing waterfalls, where marble temples and beautiful statues testified to the importance of the Delphic oracles.

There, on her tripod beside the temple of Apollo over a pit in which laurel and henbane were burning, sat the ignorant old woman, the sibyl, from whose frothing mouth came unintelligible mumblings to be interpreted for good or ill by the prophets. These oracles, after the seventh century before Christ, were written in poetic fashion and codified for future use. They were learned by heart and repeated over and over again by the credulous Greeks who had come from all over the country for a consultation. It was indeed no trifling matter to receive such an oracle from a seer who represented the victory of Apollo over the serpent. Great sacrifices of bulls or rams or cocks had to be made at the altars before one could be admitted to the oracle, and there were the sacred snakes to feed, the order to be given for the inscription proclaiming the treatment of a patient, the priests to pay, and the games to attend. It was also no small affair to travel to Delphi, two hundred miles by land from Athens and nearly as far from Corinth, or even to climb the mountainous road from the sea after a perilous voyage from the islands of the archipelago. But everybody thought the effort worth while, for even such men as Alexander the Great and Sophocles believed in the oracles and the value of the medical advice obtained through the sibyl and the gods. It was Sophocles who said, "Though the gifts of the gods fade the gods never die," and that explains the long procession of singing people as they wound around the foothills and slowly climbed up the side of the famous mountain to Delphi, many of the singers having worked themselves into hypnotic states before arriving at the temple area. Finally, however, came the visit to the sibyl, the oracle, and the vision of an angry or pleasant god. If angry, no prayers availed to open his closed left hand, a sign of death to the patient.

But faith and works often went together at these great temple resorts, where, if the oracle was sufficiently mysterious, there was opportunity for the priests or priestesses to interpret it as advising herb remedies, baths, gymnastics, and the practice for games. Water from the sacred springs was curative if judiciously applied, and there was sometimes a resort to surgery, especially to bleeding, or to vomits and purges. The patients were generally grateful and presented to Rhea or Diana little clay or wax or stone models of the diseased organ for which they had sought healing. There are in the museums in Greece and other parts of the world thousands of miniature legs, breasts, livers, doll-babies, locks of hair, finger-rings, combs, brooches, little jars of face-paint or of ointment, mirrors and other trinkets, presumably as precious to the goddess as to the giver.

Besides these medical goddesses at Eleusis and Delphi there were many others as useful in sickness. Hecate, the moon goddess, was a specialist in children's diseases. She helped them through teething and fevers by using aconite teas. Zeus himself called her the nurse-mother. At Rhodes the two daughters of Helios, the sun god, were worshipped as midwives and healers. In Athens and Corinth Isis and Aphrodite, foreign goddesses, were considered as great as Minerva Medica herself, and the muses, nymphs, dryads, and nereids were all called *iatroi*, or physicians. At Oropos every god of healing was invoked since it was thought that all of them were originally super-intelligent mortals, made immortal because of their medical knowledge, for

> Men and gods above one race compose;
> Both from the parent earth
> Derive their old mysterious birth.

Patients who went to Oropos paid heavy fees and were then wrapped in the skin of a freshly killed black ram, and put to sleep to incubate their cures by dreams. There Athena, and the four daughters of Esculapius, and Artemis, and Aphrodite, and Leto were all worshipped. Aphrodite, in the form of a dove, was a specialist in skin diseases and children's fevers; Artemis and Athena cured blindness by the use of herbs; Leto, the surgeon, as Vergil tells us, cured the wounds of Aeneas and others, and also officiated at difficult births. To her were offered models of limbs in gold and silver and ivory.

Pallas Athena or Minerva took as her sovereign remedy the peony, the symbol of medical men and women. Ocyroe, Cheiron's daughter, also used it to cure her patients, while Medea and Circe specialized in the antidotes to poisons and were often mentioned in the early centuries of history. At Argos, in the Peloponnesus, Hera or Demeter was the chief healing divinity as at Eleusis, and the ruins of her temple still stand on the hilltop above the turquoise Bay of Nauplia, where Pausanias, the traveler (117–180 A.D.) saw it during the reign of Antoninus Pius, who rebuilt many such temples to please his subjects.

Thus we see that the medical gods and goddesses of the Greeks represented the highest forces of which mortals could conceive in the whole realm of the universe, and these forces were for the special use of human beings with their immense capacity for suffering and for joy, in their life-long contest between the forces of good and evil, pleasure and pain. It therefore seems plain, as Jane Harrison has said, that though the early history of mankind is based on mythology and imagination as to prehistoric events, the analogy drawn from the life of ordinary people today gives us a distinct stratum of facts for the interpretation of the stories of the old gods and heroes. The Greek and Etruscan pottery shows us in pictures more than Homer could tell in words; the palace carvings at Babylon and Egypt speak louder than voices concerning the legends of the past, but where we find gaps in the one we may fit the ideas of the other.

To fill such gaps, however, we may go to Homer, Pliny, and Pausanius, each of whom has given us information long doubted by historians as true to history, but which archeologists, digging in the earth, have shown to be indeed based on facts. That there was a great artist named Polygnotus, an illustrator of the tales of Homer, nobody now questions, since Pausanius has been found accurate in many other statements, although not one of the paintings of Polygnotus seems to be in existence. Of Douris,[1] the great painter of vases, we have only twenty-eight signed examples, but they put the gods into very real and human forms. Shall we then doubt that there were either Amazon women or medical women simply because no authentic history or biographical details of their lives have been as yet found? And by analogy shall we deny that the Greek medical goddesses were originally human mothers touched with sympathy for the sufferings of the people around them and skilled in the observation of the symptoms of disease and the action of remedies to stay its ravages?

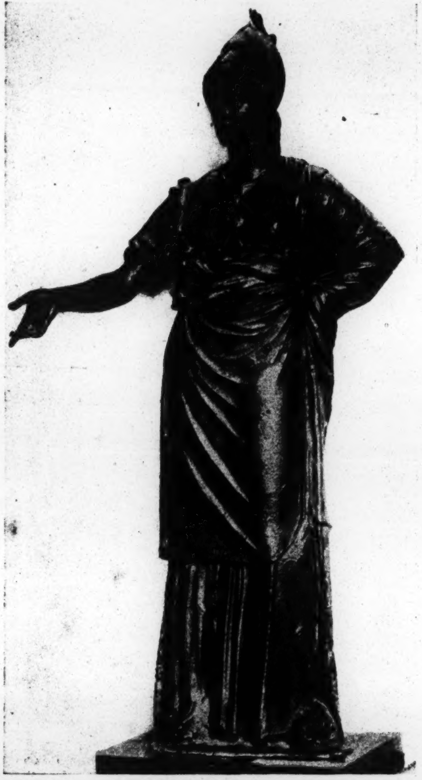

FIG. 18. MINERVA, A WAR GODDESS AND GODDESS OF MEDICINE. (ARCHEOLOGICAL MUSEUM, FLORENCE.)

One glance at the Greek statues of women who used to be called "heathen" shows us that they were mortals like ourselves, and though they have the attributes of gods of healing they evidently had the will to study what was known of medicine in order to devote themselves to the common welfare in times of sickness.

After visiting the temples of the medical goddesses on the mainland of Greece we may cross the bay or the isthmus of Corinth to the Peloponnesus and wander with the hordes of

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[1] Pottier, E. Dourus and the Painters of Greek Vases. 1909.

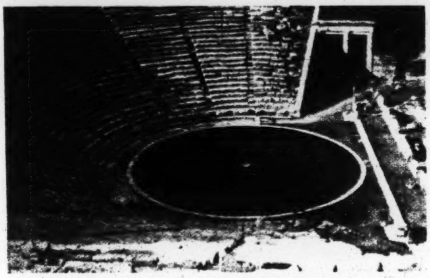

Fig. 19. Theater at Epidauros.

healthy athletes to the Olympic games, with their special appeal to physical strength and beauty. Or we may take the old road to Epidaurus, and go with the sick pilgrims to the temples of Esculapius and Hygeia for rejuvenation and healing. If we choose the latter, we soon pass the ruins of the temple to Minerva, the medical goddess, at Corinth, high on its hillside, and then roll on to Mycenae and the beehive tombs of Agamemnon and Clytemnestra, and the palace above the plain where they lived and quarrelled and were killed. Out through the lion gate of the palace walls in view of the sea we go on in the plain to Tyrins with its cyclopean ruins and prehistoric palace, the palace which Paris and Helen of Troy may possibly have once known, to the Epidaurus road in the east. This journey takes only a few hours by automobile but it must have been a weary journey on foot, especially for sick and suffering humanity.

It was at Epidaurus, on the top of Mt. Kynortion, beside the altar to Apollo, as we have seen, that Aesculapius was born, the son of the god and a maiden named Coronis. According to one legend, the young mother left her baby in the care of a shepherd and went off with a mortal man, at which Apollo was angry and gave the little boy to the centaur Cheiron to bring up and educate as a physician. Soon the child became so expert in healing human ills that he even brought the dead to life. This so maddened Zeus and Pluto that they conspired to kill Aesculapius. Again Apollo saved him, and when he was of age he married Epione, by whom he had several children, all doctors. Homer merely mentions the sons of Aesculapius as healing the battle wounds at Troy, but his daughters' names, Hygeia and Panacea, have become household words for the prevention of sickness. Pindar, 520–440 B.C., says of one of the sons,

Each of his several bane he cured,
This felt the charm's enchanting sound;
That drank th' elixir's soothing cup;
Some with soft hands in sheltering bands he bound
Or plied the searching steel and bade the lame leap up.

In the course of time many temples were erected to Aesculapius and his daughters all over Greece, but at Epidaurus was the largest of all the sanitariums and the most important for many generations. From being a mere Thessalian prince Aesculapius became the great medical god and his wife and daughters were made goddesses, or as we say today, they were sainted.

There were more than three hundred of these temples and health resorts or sanitariums[1] in Greece alone, where treatment was given during sleep in the long dormitories. The priestesses of these temples were always represented carrying a basket of mysterious remedies for the patients in case something tangible was ordered by the god or goddesses.

[1] Walton, Alice, The Cult of Asklepios. Cornell Univ. Diss., 1894.

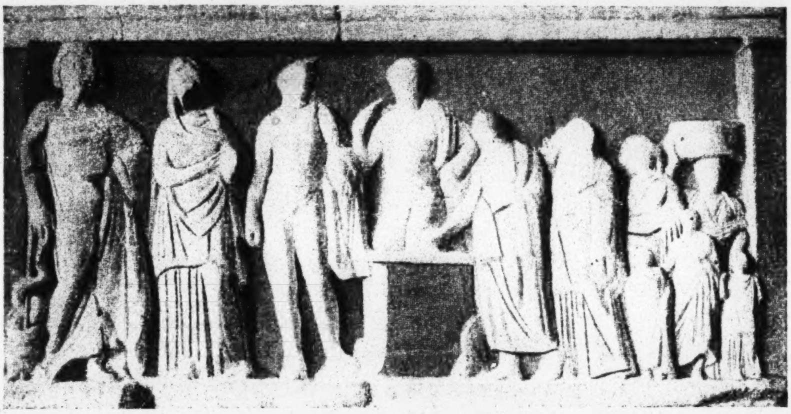

FIG. 20. AESCULAPIUS, EPIONE, APOLLO AND PATIENTS LED BY HYGIEA TO A CONSULTATION WITH THE GOD OF HEALING.

The ruins of the temples, dormitories, and public halls, gymnasia, guest houses and administration buildings at Epidaurus as seen today are most interesting. Above the plain rises Mt. Kynortion, crowned with the remains of Apollo's temple among the brambles and berry bushes. Off in the distance is the sea, and all around are well wooded hills. A little stream runs through the locality, neatly bridged, with a long race track just beyond. On the side of the hill above the temples is the most perfect Greek theatre in the world, never changed by the Romans even after they became rulers in the Peloponnesus. In the museum are exquisite remains of broken pillars and capitals, statues of the gods and a large collection of surgical instruments as well as tablets on which are recorded the wonderful cures by surgery or other treatment for which the patients gave thanks to their restorers. Walton, Farnell, Richard Caton and many other students of Greek history have given us descriptions of the life at Epidaurus during one of these quadrennial pilgrimages to the shrines of Aesculapius and the goddesses. We see the patients and their friends arrive at the sacred precincts, those in danger of dying are sent to an adjoining village along with midwifery cases. The patients who are considered appropriate for treatment are then taken to the bath pools for ablutions, after which they feed the sacred snakes, give cakes to the dogs, pay their bills to the priests, and then are assigned beds or marble slabs on which to sleep and dream or watch with one eye open for the coming of the god.

What we know of the treatment in these great Aesculapian institutions amounts to little more than tradition, but the priests and priestesses seem to have been skilful bleeders, quick operators, and excellent hypnotists. Pausanius records the story of one of the women doctors at Epidaurus named Amyte or Anicia, about 300 B.C., who was a poet as well as a writer. She wrote the oracles of the god in verse and was a favorite with the patients. From the votive tablets to Aesculapius and Epione and their daughters we can judge what sort of surgical treatment they gave their "cases," and though the operations and cures are ridiculous they are not much worse than certain testimonials of patients at the pilgrimage health resorts of Lourdes and the shrines of the medieval saints.

Of the testimonials at Epidaurus we have space for only a few samples. A child of three prayed the god for a baby. She slept in the abaton, or dormitory where the god came, but while promising her what she asked he insisted that she had not asked enough. However, the child went home and carried a baby within her body for three years, after which time she returned to Epidaurus to pray for its birth. At this the god laughed and reminded the child that he had told her that she had not asked enough at first. Then the baby was born quite painlessly, and the little mother carried it home. Babies were not ordinarily born in the sacred precincts, however, for everything painful was kept at a distance where provision was made for all such emergencies. Hucksters, traders, banal entertainments and funerals, everyday business affairs and markets were sternly kept as far as possible from the religious affairs of the sanitarium. Still, even there a rich patient had more likelihood of receiving careful treatment than a poor one. A typical cure is the following: A man had dropsy and was swollen beyond all human aid. He went to Epidaurus, bathed, paid his fees, and slept in the abaton. The god came to him in the night, cut off his head, hung him up by his feet to drain, and when he awoke he was again himself, head in place and dropsy gone.

It is no wonder that Aristophanes, 450–380 B.C., scorned such testimonials and held them up to ridicule. A popular method of exposing these cures was by the mimes or dramas of Herondas, a century later than Aristophanes. These mimes were clever conversations, partly in pantomime, supposedly held between the patients or their friends who purported to have been cured; gossipy dialogues they were with a strong sense of humor, mimicking the sound of the god as he called his dog or clucked for the snakes. Still, in spite of pretended skepticism in sophisticated circles of society, the Greeks had a firm belief in dreams. Socrates, who lived during the so-called "golden period," 470–399 B.C., said that the visions of good men were pure and prophetic, and that when a patient had nothing harmful in his stomach and was quite peaceful he might lay hold on truth during slumber, while Euripides, 480–406 B.C., believed that "dreams that flit on sable wings" come from the lower or earth world and are in no sense divine. They might, however, be worth interpretation by a priest, because the whole air might possibly be full of immortal spirits to whom all truth was known.[1]

It is said that Aristides the Just, who died 468 B.C., was once cured in a dream after he had suffered thirteen years without relief. Apelles, the painter, of the time of Philip of Macedon and Alexander the Great, was cured of long-standing dyspepsia at Epidaurus, but not in a dream, for though he promised a large fee and good testimonial the gods refused to heal him unless he ate such unpalatable food (cheese, citron and lettuce) as was prescribed, walked around the grounds with bare feet, bathed in cold salt water and wine which he detested, endured hard beatings, sweatings, and vigorous frictions with salt and mustard, drank a mixture of anise seed and olive oil for his headaches, and gargled his throat frequently. We see little hocus-pocus in this active treatment, but as a rule before, and even long after Hippocrates (460–377 B.C.) there was almost no science in medicine but a firm belief in hygiene and the healing powers of nature as well as in the efficacy of the gods and goddesses of medicine whose statues are found in large numbers throughout Greece, testifying mutely to the appeals of the sick. There are hundreds of statues of Hygeia, generally representing her as a beautiful maiden, with a serpent by her side, and a saucer of food in her hand from which she feeds the hungry creature.

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[1] This strangely reminds us of the modern radio and seems like a prediction of long ago come true. (See Cicero, De Divinitione.)

Dannemann, F. Naturwissenschaft und Heilkunde, Essays in the History of Medicine. Presented to Sudhoff on his seventieth birthday, 1924.

From the seventh century B.C. and through the Roman dominion in Greece, Hygeia is however rarely seen alone. Usually she appears to be introducing patients to Aesculapius or giving them some sort of treatment. She bears her own medical staff, the caduceus, or she carries a basket of herbs for the patients. She seems always beautiful, modest, and intellectual. In the Berlin museum we find her alone with her snake. On a grave stone in the same museum we find her seated, crowned with a diadem, and in her lap three little "*wickel kinder*," swaddled babies, whom she is tending. On a votive tablet from Smyrna is a torso of a woman who bares to the goddess her large cancerous breast, and these are merely samples of the representations of Hygeia.

These statues come from the best period of Greek art, but there are also interesting pottery bowls, saucers and vases on which we find intimate scenes of the daily life of the people, among them medical sketches such as one showing a woman holding the head of her patient while he vomits, evidently the result of an emetic so popular as a remedy for an overloaded stomach,[1] and there are interesting grave stones of doctors and their patients which tell a simple story with great art.[2]

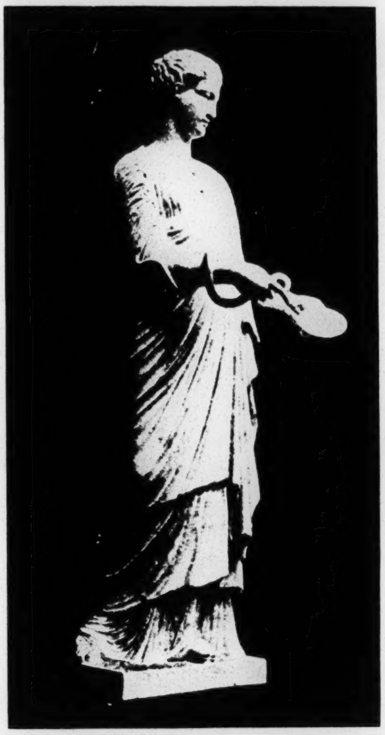

FIG. 21. HYGIEA. (BRITISH MUSEUM.)

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[1] Holländer, E. Plastik und Medizin. 1912, pp. 74, 75, 87, 144, 145, 162, 194, 260.

[2] In the British Museum is a grave slab showing an elderly woman holding a pomegranate. Beside her stands a little girl holding her basket of remedies, as Aesculapius was

Whether the study of anatomy was a study of art for art's sake or a study of the human body in its perfection of health as an example of gymnastic training we can not tell, but to the Greeks a healthy mind must have been a sign of a healthy body. Each sculptor brought out the points which appealed to himself in his own way and as an example of his own times. Unfortunately, of fifteen hundred works of Lisippos, the favorite sculptor of Alexander the Great, 356–323 B.C., nothing remains, and of the decorative paintings of Polygnotus, the friend of Pericles, 495–429 B.C., as has already been said, not one is left, and since most of the plays of Aeschylus are lost, eighty-three out of a possible ninety, it is not surprising that no work by medical women has come to light, and we can scarcely wonder that only a few fragments of the poems of Sappho seem to be in existence.

It is impossible to mention Sappho and her poems without a sigh for her lost works, which might have told us a great deal about the women of her times.[1] She lived about 600 B.C. on the large island of Mytelene or Lesbos, across the strait from Troy, a woman of noble birth and a feminist who, for political reasons, was exiled to Sicily. Aristotle placed her beside Homer, who may have antedated her by two or three hundred years; Plato called her the tenth muse, and when such judges praise her there must have been many of her contemporaries who applauded her and her works, for hers was a period when women went into politics and played their own part in every phase of life. During this sixth century the Eolian and Dorian women as well as the Spartans were active for woman's rights, but the Athenian men had begun to house their women and were trying to keep them under their thumbs. After a hundred years of such confinement, however, the Athenian women rebelled and Aristophanes laughed at the dames of his day who wore mannish clothes and pretended to go into public life. He even called Sappho "that vulgar Lesbian." Thus history repeats itself from age to age.

As for their "mannish clothes," if we study Greek statues of different periods as far back as the time of Sappho we find the costumes of men and women always graceful and somewhat similar. Sometimes the women wore blouses and often a warm wrap. In the arrangement of their hair there was frequently a change of style. Sappho and the feminists of her time wore their hair in ringlets, and pulled their robes rather tightly around their legs. Two hundred years later we find Aspasia wearing a very long and loose garment and her hair waved neatly, while the wife of Alexander the Great, still later, wore a clinging skirt and a sort of jacket under a bright shawl. The men of these periods are often seen in war garments with helmets, or in long wraps reaching to their sandalled feet, for evidently comfortable clothing in times of peace was always in fashion.

But we have omitted the story of the women of Homer's time because they seem to belong to every age. Whether there was one Homer or

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often seen with a little boy. There are many grave stones to women doctors, as we shall see later. They were placed by the roadside to be seen by passing pedestrians. The pomegranate was a sign of fertility.

[1] Harrison, F. The Attic Drama, Selected Essays, 1925, p. 95. Bascoul, J. M. F. Σαπφώ. The Feminist Movement of the VI Century B.C., 1911.

several, or how much of Homer was based on tradition and how much had as a background actual history of heroes and famous women, scholars have not been able positively to determine. Schliemann and other archeologists have unearthed so many objects proving the main facts about the siege of Troy that we may well believe that most of the tales of the Iliad and Odyssey were based on facts, for, as Sarton says,[1] an epic may be considered as the primitive form of history. At any rate, the love stories of Homer's time seem very like those of the cinema today, and in the springtime of long ago it must have seemed quite natural for an independent woman like Helen to leave her elderly husband and elope with the handsome Paris for any adventure. If we believe that Homer's tales are founded on fact, we can not doubt the tradition that Helen had been to Egypt to study medicine with Polydamna, the wife of a Greek named Thonis, and that she gave to Helen the famous nepenthe with which to poison or cure her enemies or friends. We read in the fourth book of the Odyssey[2] how Helen "cast a drug into the wine whereof they drank, a drug to lull all pain and anger, and bring forgetfulness of every sorrow."[3] Both Herodotus and Diodorus Siculus mention this as historically true, and they reiterate that the nepenthe would calm a pain, soothe anger, and bring forgetfulness of sorrow. It was evidently an opiate mixed with some other herbs. Sarton says that the heroic men and women of Greece knew as much about medicine as was possible in those days. They used hellebore, iron-rust, various pain-killers, burned sulphur, inhaled mandrake and poppy juice from a steaming sponge to produce anesthesia, and were skilful in removing spear heads and arrows and treating wounds.[1] Homer said of Helen that the "physician outweighs many others in value," and again, of Agamede, that she "understood as many drugs as the wide earth nourishes," (Iliad xi, 739–745) for she was the daughter of Arsinoos,

> "Agamede, with the golden hair,
> A leech was she, and well she knew
> All herbs on ground that grew."

In the Odyssey, (x) we also find a nymph named Kirke or Circe who held Odysseus in her power for a year by her medicines and then changed his followers into swine. And again in the Iliad, Hecamede is said to have revived Patroclus with tonic drinks and Pramian wine which contained goat's milk cheese, onions, barley meal, honey, and wine. Such a drink was made by Metaneira for Demeter with which to break her long fast. In the Aeneid (i, 83), Vergil tells us that Medea, the wife of Jason who won the golden fleece, knew magic and could cure insanity. Pindar also vouches for this as a fact. Ovid says that Oenine, having been taught medicine by the divine Apollo, after refusing to heal Paris because she was jealous of Helen, committed suicide from remorse.

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[1] Sarton, G. Introduction to the History of Science. 1927, p. 54.

[2] Prose translation by Butcher and Lang, 1907, p. 39.

[3] In the Odyssey (iv, i, 227) Polydamna is mentioned; she is supposed to have lived at Thebes, in Egypt, during the reign of the Pharaoh Sesostris, whose temple and obelisk were at Heliopolis, the medical center of the country, during the xii Dynasty (2000–1780 B.C.). Theophrastus in his history of plants, (Vol. i, ix, c. 15) does not exactly tell us what nepenthe was, but critics believe that it was inula helenium in wine, though Plutarch tells us that it was mixed with verbena, the remedy of Isis, and adiantum in wine, and Dioscorides and Galen said it was made from an Egyptian root called oinopia, while others think it was the datura strammonium, and recently still others think that it was a preparation of poppies or of our oenothera or evening primrose.

[1] Max Neuburger, *History of Medicine*, Vol. i, pp. 90–91.

Thus we see that in the mind of Homer and other writers there was nothing unusual in the practice of medicine by women, nor did they necessarily use magic. Homer wrote that pestilences were sent by the invisible arrows of Apollo, thus begging the question as to their origin, but nevertheless he would not have cared to risk omitting to sacrifice a cock or a ram or a pig to the gods in time of sickness, even as Socrates on his last day. But Homer did say something about men surgeons and their operations as well as about physicians of both sexes. There was Podalirius, son of Esculapius, who tended diseases invisible to the eye, and Machaon, the army surgeon "over thirty smoothly hollow ships," who cut out the arrows and sucked the poison from the wounds of Menelaus and applied balsams to soothe his pain. Podalirius had been a pupil of Cheiron the Centaur who taught medicine to Esculapius or Asclepios, his father. Of Machaon, Homer says:

> "He found a balm for every grief.
> On some the force of charmed strains he tried,
> To some the medicated draught applied;
> Some limbs he placed the amulet around,
> Some from the trunk he cut and made the patient sound."

Dr. Goyanes, director of the Spanish Institute of Cancer, tells us[1] that Homer mentions more than one hundred and thirty different wounds and injuries. In most cases these wounds were washed with warm water and covered with a sedative dressing. Sometimes it would seem that he describes cases which he had seen, like that of the soldier whose heart had been pierced by an arrow and who lived until the weapon was pulled out of the wound when he immediately died; and of another patient who must have had an injury to the brain stem when he fell to the ground "face first." Homer moreover adds that as a physician is worth ten men, a surgeon is worth ten soldiers. To the physician, however, the remedies of Egypt "where prolific Nile with various simples clothes the fattened soil" were a necessity. And of the first physician, Homer says he was "From Paeon sprung their patron-god imparts To all the Pharian race his healing arts." (Odyssey, Book IV, 320–325, Pope's translation.) Thus we see the value of medicine in Homer's time quite apart from temple cures and faith healing. As to the medicine of Sappho we know nothing in reality, but in one of her poems she describes with some exactitude the excitement of a lover under the influence of his adrenal glands, a very observant word picture of his nervous reactions to the lady of his heart.

Leaving the ages of Homer and of Sappho when, as we have seen, women in Greece went about in public as freely as their husbands did, studied medicine in Egypt if not with tutors at home, and finally dipped so deeply into metaphysic as to forget some of the practical sides of life and to neglect to make scientific progress in anything, we come to the time of Pericles, 495–429 B.C., and find men getting the upper hand so that although

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[1] See review in *J.A.M.A.*, April 12, 1924, Surgery in Prehomeric Greece.

Aspasia, his wife, was so learned a woman that she became the teacher of some of the greatest men, even Aristotle indirectly, Pericles, in his famous funeral oration, advised women in general, especially widows, to keep out of the public eye and to cultivate in their homes "their natural characters." This may have aroused the wrath of Aspasia, as would Sappho have been annoyed could she have heard Simonides (528–468 B.C.) declare that women were the limit of evil, and Hipponax at the same time say in scathing iambics that women were a joy only on their wedding day and at their funeral. On the other hand, we note that Xenophon took his wife to hear Aspasia lecture, and that Plato was one of her pupils. Aristotle, 384–322 B.C., accepted her teachings through his master, Plato, who lived 429–347 B.C. A little later Alexander the Great, 356–323 B.C. became a pupil of Aristotle and his wife Pythias. We are told that Aristotle and Pythias spent a long honeymoon on Sappho's island of Lesbos or Mytelene, studying biology and physiology together. Later they wrote an encyclopedia from the material they had gathered, but the fact has been generally forgotten by historians.

This, then, ushers in the golden period of Greece, that marvellous century when women studied with men in Plato's Academy and walked with other great scholars under the olive trees, discussing the burning topics of the time.

It is a puzzle to understand why, since this was the time of Hippocrates, so little was written about him and his work in medicine. Perhaps the chief reason is that he was born on the island of Cos, off the coast of Asia Minor, travelled for study and pleasure in the East, and then lived and worked at Larissa in the northern part of the mainland of Greece, on the slopes of Mt. Olympus, where he organized his famous hospitals and school. Perhaps he seldom visited Athens or met the celebrated Athenians. We shall study Hippocrates (460–377 B.C.) a little later as a super-type of doctor who taught women as well as men in his classes. This was the time when philosophy, however, meant more than medicine to a scholar, and Socrates (470–399 B.C.) was teaching while Sophocles (495–406) and Euripides (480–406 B.C.) and Aristophanes (450–380 B.C.) were producing their immortal works, the Parthenon was building, and Athens was in her prime. It was then that Aspasia and Pythias were working with other great thinkers and laying the foundations of metaphysics and theoretical science which are still fresh and important as studies today. Socrates, however, was unwilling to permit Xantippe to attend Aspasia's lectures. We can but pity Xantippe and her enforced imprisonment in the house to which Socrates came at irregular times with his pupils, expecting to find the "beds aired, the dough kneaded, and the children quiet." It has been recently suggested that so little did Socrates think of the ability of women in any public undertaking that he even joked about his mother, Phaenerete, who was an expert midwife and probably a skilled family physician, quite different from the magicians and faith healers of his day. Probably he had some reason for his ungallant words about Xantippe, but we pity her and wonder why she wept so loudly as to annoy Socrates when he was about to drink the poison. Evidently she was an emotional if not hysterical person rather than a calm philosopher. As for Phaenerete we know that it was no new thing to have trained midwives in Athens, for even as early as 1228 B.C. there was said to be a daughter of Aetes,[1] the king of Colchis, who was skilled in medicine and knew all poisons, and we have seen that to Homer women doctors were not rare. When the Pythagoreans were teaching in Magna Graecia, in the sixth century before Christ, the wife and daughters of the master were helping him in his medical work, un-medical as it seems to us.

Even though the Pythagoreans were more like philosophers than healers of the sick, they wrote what may have been the first treatise on child welfare, and the women of the family of Pythagoras won the prize in a debate with Euryphon, a well-known contemporary physician, on the viability of the seven-months foetus, the women arguing that it was viable even before the seventh month. Osler, in his *Bibliotheca Prima*, quoting from Theodor Gomperz, says that no line of Pythagoras has come down to us. His "golden sentences" were probably a fabrication of the fourth century A.D., but even so, no one doubts that there were great thinkers in his sect, nor should one doubt that Aristotle's rule for writing deterred many a woman if not men from preparing books, since he taught that a "writer should say everything he ought, nothing but what he ought, and say it as he ought," and women must have taken this to heart.

Among the great women of Greece long before the Christian era, as in Egypt, there were learned queens, of whom Artemisia of Caria was the most famous. Her husband Mausolus ruled wisely and well and died 355 B.C., but he is remembered chiefly by the marvelous tomb which she erected to his memory, portions of which are now in the British Museum. On its summit is a great chariot in which stand Mausolus and Artemisia, and though her face is partly obliterated it is easy to see that she was a woman of character and intelligence. Even today we speak of her when we mention the flowers which she named for herself and her friends, for she was a medical student and a botanist. It was said that she knew every herb used in medicine. Her skill was praised by Strabo, Pliny, Suidas, and Theophrastus, and not doubted by Tiraquellus. According to Soranus of Ephesus, artemisia, the herb, was used in the bath to prevent an abortion, or as a fumigation in retarded menses or retained placenta. Another species of artemisia together with elaterium was used to cause abortions, and plantains and willows were used for metrorrhagia. Pliny says that it was she who discovered the value of wormwood as a drink, the absinth once so loved by Parisians, and she named the cyclamen, gentian, and lysimachia, for the kings of Arcadia, Thrace, and Ilium.

In Thessaly there were not only medical women but magicians and evil spirits who knew how to harm mortals as well as to help them. They also could remove spear points and arrow heads, and cleanse a wound with soothing roots.[1]

Whether the medical women of the great days of Greece were themselves writers or not, we know many of them by name and others by reputation, and though Pliny (23–79 A.D.) wrote of the "nobility of the profession of the obstetrix" it was thought in his day that women doctors should be as quiet and inconspicuous as possible in their business so that "after they were dead no one would know that they had lived." But when a man like Seneca, 43 B.C.–65 A.D., could praise the "skilful fingers of his woman doctor," and others could say quite casually that when there was any doubt of pregnancy five obstetrices, "id est medicae," should be called in consultation, one can not doubt that there had never been a time when Greek women were not doing good medical work. If occasionally slander descended upon them and they were called courtesans, it is to be regretted, but it is certain that there were also men as immoral as they.

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[1] Bennett, A. H. English Medical Women, p. 2 (1915).

[1] Iliad, IV, 219; XI, 512, 830, 845; XVI, 29.

We do not know the dates of the women doctors and writers mentioned by Pliny any more than we know the year of death of those whose tombs have been found. But he must have had authority for his statements concerning Lais and Sotira, and the Theban Olympias who wrote a book on abortions and sterility, and Salpe, who wrote on eye diseases, and Elephantis, and Philista, the sister of Pyrrhus (318–372 B.C.) who was an obstetrix, and Victoria, "the Gynecia." Philista was sometimes called Elephantis, according to Soranus, who collected materials for quite a considerable biographical encyclopedia. They say that she wrote medical books and was a professor or teacher or *magister* of medicine, and that she was so beautiful that she was obliged to lecture behind a curtain in order not to distract the attention of the students. Lais was a contemporary of Philista and her specialty was to treat malaria with menstrual blood, and she or another contemporary is said to have reported a cure for epilepsy by an attack of malaria. How this was brought about is not stated, but it is quoted by Athenaeus. Lais also wrote on abortions, and some one has suggested that she was the woman mentioned as a friend of Aristippus, Diogenes and Demosthenes, but the name seems to be rather common.[1] Salpe was said to use testicular preparations and bone marrow and other animal remedies in her work.

If we look into the works of Euripides (480–406 B.C.) we shall find the nurse in the Hippolytus[2] telling the Queen casually enough, to send for a woman doctor "to compose her disease," and again, "If thy disease be that thou may'st not name, Lo! women here to allay thy malady. But if to men the trouble may be told, speak, for to the leeches this may be declared." In the works of Sophocles (495–406 B.C.) and Aeschylus (525–456 B.C.) and Euripides (480–406), the heroines Antigone, Electra, and Alcestis, were all types of intelligent women in an age when it was the fashion for men to study with women like Aspasia, and for women to go to Plato's Grove and study with men. It was a theory of Aristotle that "Wherever a constitution has not taken women into account they are not included in the laws, but if they have been educated they should have the rights and privileges of the laws."

There is a well known and sometimes doubted story of a famous doctor named Agnodice, a pupil of Herophilus, a follower of Hippocrates. She was evidently a great favorite among her women patients at a period when women doctors were sometimes accused of immorality such as performing abortions, etc. To avoid trouble Agnodice wore her clothing man-fashion, and when this was discovered by her rivals she was ordered to the tribunal to stand trial for practicing under false pretences. This made such a commotion among the women of Athens that they too rushed to the tribunal across the narrow valley from Mars Hill, and demanded that the judges release Agnodice, for, said they, "You are not our husbands but our enemies if you condemn our Agnodice who saves our lives." The judges thought it wise to release her and permit her to wear her chiton and hair as she chose.

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[1] Pliny Secundus, the Elder, Bohn Library, Vol. v, Book XXVIII, pp. 305, 365, 368, etc.

[2] Translation by A. S. Way, lines 293–296.

If we search for the methods of Herophilus who lived in the last third of the fourth century, we shall find that it was he who founded the science of anatomy at the medical school of Alexandria,[1] dissected many hundreds of human bodies in his zeal for correcting certain ancient statements, named several organs of the body, and wrote a book on obstetrics for his pupils. This book was for many centuries attributed to Hippocrates. From him Agnodice must have learned how to perform embryotomy, using a boring and cutting instrument before crushing the child's head. She probably performed Caesarian section on a dead mother and did other operations as taught by her master. This story of Agnodice was told by Hyginus,[2] the librarian of the Emperor Augustus, who may have had an old book dealing with the history of medicine. Since that time many writers besides Pliny have quoted the tale in good faith.[1] Tiraquellus takes up the cudgels for Agnodice, and he quotes not only Pliny but Martial (43–104 B.C.) and Celsus of the second century A.D., and Diodorus Siculus (90–30 B.C.), and Quintilian, the Spaniard (35–95 A.D.), and Apollonius of Rhodes (born 235 B.C.) and Apuleius (born 125 A.D. —who wrote The Golden Ass), in order to prove that in each century and from necessity there were capable women doctors in practice who "should be saluted, for medicine is the safeguard of mankind." Tiraquellus was a noted lawyer of the sixteenth century A.D., and though he picked his references at random he certainly knew whereof he wrote. He adds in true lawyer fashion that even if we knew not one individual name of a woman doctor or obstetrix we should realize that since men were not allowed in the lying-in room there must have been women trained to manage labor and to practice among the women and children of all countries. He says that from the time of Agnodice when even "Attic women were emancipated from the strict tutelage of their ancestors" they were given the right of citizenship; and Demosthenes had praised their skill at the same time that he told how gentle and useful his own wife was in caring for him when he was sick. How much they studied we can not tell, but, according to Xenophon, Socrates once wrote to a friend, "I have never studied medicine nor learned anything about it from a physician, but if you will appoint me state physician I will try to learn something about it by experimenting on you."

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[1] Herophilus, 355–280 B.C., named the calamus scriptorius and torcula Herophilli, and placed the seat of the soul in the brain. Baas, p. 90, op. cit., speaks of Agnodike, a pupil of Herophilus aus Chalkedon, as "die in Athen die Geburtshülfe übte."

[2] Polycarpus Fridericus Schacher et Joannes Henricus Schmidius, Dissertation, Leipzig (1737). These authors quote from their own medical teacher, C. Platner, who wrote a "Commentatio de Arte Obstetrica Veterum," in which he made the statement that Hyginus had probably quoted the Agnodice story from Menon's history of medicine, as follows: "Antiqui obstetrices non habuerunt, unde mulieres verecundia ductae interierant. Nam Athenienses caverant, ne quis servus aut femina artem medicam disceret. Agnodice quaedam puella virgo concupivit medicinam discere."

[1] See Heinrich Haeser, Grundriss der Geschichte der Medicin (1884). Also his Text Book of Greek Antiquities. Also Ploss and Rénaud, and Tiraquellus Andreas, De Legibus Connubialis et Jure Martiali, pp. 100, 101. Also his De Nobilitate, Chap. XXXI, Foeminae Medicae (1566), and Baas, p. 90, op. cit.

As regards Agnodice's mannish clothes, Harless has found[1] that it was not unusual for women to arrange their costumes as they pleased, for even in Plato's Academy (427–347 B.C.) Axiothea and Lasthenia, students of natural history and philosophy, and Arete, daughter of Aristippus of Cyrene (about 380 B.C.) and Arete, daughter of Dionysius (430–367 B.C.), dressed like men for convenience. One of these students was so brilliant that a medal was struck in her honor and she was called "The Light of Greece." Lipinska says that Lasthenia and Axiothea were Dorians into whose hands a copy of Plato's Republic had fallen. The theories of this work seemed to these women so fine that they donned masculine attire in order to attend Plato's lectures unnoticed.[2]

After the trial of Agnodice, as we have seen, a law was passed permitting women to study where they pleased and with whom they pleased, and to wear what suited their fancy. They therefore became *Maiai*, or *Iatromaiai*, or *Iatrinai*, or *Omphalotomoi*, or *Obstetrices*. These terms may be translated as doctor, nurse, grandmother, but the *Maiai* is perhaps the word which later became the French "Mire" or doctor. These words are often seen on old Greek tombstones, such as, for example, "Theka, Theklas, Iatrines, a Christian and also a woman doctor."

Short epitaphs from Christian times merely show the continuity of women's work in medicine. The above and the following one are taken from Boeckh, Vol. IV, p. 454, Nos. 9209 and 9164. The stone of Basile reads "*Basiles, tes iatrines, Zomatodéxe*," and was found in Corycos.

Whatever medical differences there were in these terms we know that the iatrinai or maiai were physicians in the accepted terms of today. Their medical standards must have been high because all scholastic standards were high at the time of Hippocrates. Even Socrates believed that everybody needed some medical education, especially women who had the care of their families.[1]

One can not write a history of women in medicine without mentioning their teachers. We have already cited Herophilus, sometimes, like Diocles, called the second Hippocrates, for in anatomy and obstetrics he rounded out the life of his forerunner; but, all in all, the greatest medical man of ancient times was he who has always been known as the Father of

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[1] Ch. Fr. Harless, Die Verdienste der Frauen um Naturwissenschaft und Heilkunde, pp. 109, 111, 114, etc. (1830).

[2] Mélanie Lipinska, Histoire des Femmes Médecins, p. 47 (1900).

[1] H. Scoutetten, Histoire des Femmes Médecins (1868). The author was a member of the Royal Academy and professor at the University of Paris.

Medicine, and although many of the works attributed to Hippocrates were probably not written by him, nevertheless to him we owe the start and the impulse of all scientific studies in the art of healing. Hippocrates was born in 460 B.C., on the island of Cos, off the coast of Caria, in Asia Minor. He was a great traveler and he founded schools of medicine in Cos and Larissa (in Thrace), where he died in 377 B.C. He might have met Herodotus, Thucydides, Plato, Pericles and Aspasia, and all the other brilliant people of his time, and he must have heard at first hand of the battle of Marathon, B.C. 490, and of Salamis, B.C. 480, and of Xerxes' bridge over the Hellespont (built in 464 B.C.), and if he did go to India or China to study he was probably touched by the generosity and altruism of the Buddhists, and impressed with the teachings of Confucius.[1]

Scholars differ[2] as to the writings and work of Hippocrates in gynecology and obstetrics, but he is frequently credited with establishing schools in these studies where women were received freely as pupils. The famous Aphorisms, however, give us a good idea of his teaching on these subjects. Among them we find allusions to the anatomy of the uterus, "the temporary home of the child," and to the opening of the uterus to cure sterility, nos. 29–63, and of the menstrual fluid as equivalent to the seminal fluid, and of the function of the uterus as causing grief and hysteria and depending on the moon and stars. He insisted upon the general use of the stool or obstetric chair in labor, and advised hot sitz baths and fomentations to hasten the first stage. He strongly urged the obstetrix to attend to the cleanliness of her finger nails, and to meddle with the patient as little as possible during her confinement. He did, however, advise the iatromaia or obstetrix to try delivering the patient on her knees or standing if the last stage was unduly prolonged. Whether the patient had puerperal fever from bits of retained placenta, or not, he ordered the nurse to keep her in bed for forty days, only allowing her to perform the ceremony on the fifth day of dancing with her baby five times around a fire and then presenting it to the nurse in a grain basket for its training and food. The nurse, not the doctor, cut or tore the umbilical cord after the delivery of the placenta, but if the placenta did not come away whole the uterus must be irrigated or cauterized. The baby was first rubbed with salt by the nurse, then washed and oiled and swaddled. Even before the birth of the child the nurse had been busy rubbing the patient's abdomen, or even raising her from the bed and suddenly dropping her to hasten the pains. Sometimes nurses sang to their patients to keep up their spirits when things were tedious. It was the *obstetrix*, however, who understood version and performed it when necessary. Witkowski[1] says that many of the seven-months infants lived and were carefully fed by wet-nurses. Abortion was common and was not considered either dangerous or criminal, nor was the death of the mother thought to be so serious as the death of the baby, but in case of the death of both, the baby was buried separately in its own grave. The midwife or obstetrix was generally a woman who had had children, intelligent, clean, healthy, strong, quiet, prudent, not avaricious, and very well trained in her art. As a matter of course she knew certain magic words and when to use them. She cared for the patient for fifteen days after the birth of the baby, which she turned over to a wet-nurse of her own selection, and received her fee on a piece of dry bread.

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[1] Garrison says that it was the awakening of free thought that led to Hippocrates, as to the Hebrew prophets, both having turned men from warfare to peace and good-will towards their neighbors, and hence to a desire for education and the study and interpretation of nature. Herodotus chronicled everything that interested him at a time when travel was most difficult, but he seems not to have mentioned Hippocrates, and he lamented that there was nothing new in art or science or poetry or medicine or religion worth recording. Herodotus lived from 484 to 425 B.C.

[2] Adams, Francis. The Genuine Works of Hippocrates. Sydenham Soc., 1891.

According to post-Hippocratic teachings, perhaps dating from Diocles of Carystos or Herophilus, the uterus was the seat of many diseases, nervous, cancerous, or systemic. Hysteria or suffocation of the womb was common, especially in an unmarried woman whose womb was supposed to be lighter than that of a multipara. Such a womb in a fit of hysterics was drawn up to the liver by some attraction where it pumped itself full of blood and descended again to its own place.[2] In order to draw the uterus back more quickly than by nature the patient was given vile odors to smell while fumigations of sweet odors were made at the vulva, so closely related were the two organs. In the meantime the patient must live on cabbage and drink cabbage water. If the uterus were "adherent to the heart" she would require poppy juice, leeks, vinegar, juniper and sage as medicines, or the physician might insert a pessary (tampon) of goose-grease and pitch into the vagina. One of the symptoms of such an occurrence was vomiting and loss of speech. Thus we see how women doctors and others were groping for the science of obstetrics without making sufficient investigations of their own. It was a period of philosophizing and speculation and generalizations, and few but Hippocrates were collecting facts and noting symptoms with which to study disease. Most of the so-called healers went to the temples for facts, and we have seen how worthless their notes must have been. It is not known whether or not Hippocrates ever went to Epidaurus, but there is no evidence that he was impressed with the treatment at any sanitaria except those of his own founding. Diogenes (412–323 B.C.) in his tub was leading the simple life at Corinth, and evolving his theories of the circulation of the blood from mere speculation. Democritus (460–370 B.C.) was trying to count the pulse with a water clock and theorizing as to what its source was, and then talking about it in the market place, but Hippocrates was not only philosophizing but trying experiments and keeping careful records of them. He believed in nature as a cure for most ills, a change of scene for the neurasthenic, sunlight and fresh air for the consumptive, purgatives and sweats for the plethoric, music and the theatre for the weary business man.

He watched the facial expression of his patients, attended to their diet, tried to regulate their four humors, blood, black bile, yellow bile and phlegm, and adjust them correctly if possible.

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[1] Witkowski, G. J. Histoire des Accouchements chez tous les Peuples. (1887.)

[2] See Article by Hunter Robb, Hippocrates on Hysteria, *Johns Hopkins Hosp. Bull.*, No. 23, p. 78, 1892.

The writings of Hippocrates were copied and recopied for centuries, rediscovered at the time of the Emperor Augustus and then translated into Latin and re-edited by Erotian, used by Galen, and then, in a more or less garbled fashion, they continued to be studied almost up to the 18th century when critics began to use them chiefly for historical material. Clinical records of forty-two cases have come down to us from Hippocrates, so clearly treated that Osler and Sydenham took them as model records. Among these cases were quinsy, diphtheria, typhoid fever, pleurisy, dislocations of bones, injury to the skull, etc. It is difficult to believe that Hippocrates and his pupils were satisfied to know merely the anatomy of the pig or ape, but possibly such was the case, and their knowledge of pharmacy and chemistry was nil. If we may judge their ideas of anatomy, therapeutics, and physiology from the pictures in Persian manuscripts of uncertain date, and from the models of human organs used as votive offerings, we shall have to confess that their diagnosis and treatment were pure guess work. Herodotus mentioned a skeleton at a feast, but we wonder what he was visualizing to himself, and Aristotle wrote that food was cooked in the stomach, that the blood took the cooked food to the heart to be made into more blood, and that the body had only eight ribs, so that even with his powers of observation he progressed very little beyond the mass of his contemporaries.[1]

At the same time it is interesting to find Agnodice's teacher, Herophilus, inventing names for nerves, tendons, blood vessels and the torcula in the brain, and making new surgical and obstetrical instruments, and teaching large classes of students in Alexandria, while the schools of Hippocrates were still flourising in Cos and Larissa, and the rival school of Cnidos, in Asia Minor, was working on quite an independent basis. To the Cnidians symptoms were classified as plants were classified, treatment was very energetic, and Isis and the other gods of healing were relied upon to cure where human means failed. The Cnidians had a large following of women students, for they worked by rule and the dictates of the school, and they probably felt happy to be doing something for their patients rather than keeping up a watchful waiting. Pindar, (B.C. 522–443) a hundred years earlier, said that the medical schools of Rhodes and Cyrene were the most popular in his day, and Herodotus mentioned the Asclepieia, or health resorts, where patients went in throngs to have their diseases diagnosed by laymen and treatment given according to the interpretation of dreams, as at the religious resorts of Epidaurus and Athens.[1]

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[1] Singer tells us that Aristotle believed that invertebrates were created spontaneously while vertebrates began as embryos though not as ova. (Charles Singer, History and Methods of Science Greek Biology and Modern Biology. Vol. II.) Perhaps we misjudge Aristotle, for we take his theories only at third or fourth hand. (Frank R. Smith, *Johns Hopkins Hosp. Bull.*, p. 85, Sept. 1893.)

[1] For Herophilos and Erasistratos see Sarton, p. 159, Introduction to the History of Science. Herophilos wrote a book for midwives (maiotikon), which is often referred to as by Hippocrates. Tertullian classed him among the butchers. The name is generally spelled Herophil*us*.

Garrison gives a good account of this period in an article on Medical Classics, *J. A. M. A.*, *56*: 1785, 1911.

Thus we see that there were many medical schools in Greece in the five centuries before Christ and that men and women studied together. Evidently nothing was standardized nor could it be where there was so little investigation or scientific study. The remedies used at the different schools were collected after a fashion by Theophrastus, 372–287 B.C., the friend of Aristotle and the legatee of his books and garden. Theophrastus knew the names of more than five hundred plants and classified them like the classification of Aristotle's animals. He was, however, filled with the superstitions of his time, afraid to gather peonies or fever-few if a hawk or buzzard was flying overhead, a believer in the magic properties of dictamnus and mandrake, and he undertook the preparation of love-philtres and poisons.

Somewhat later Mithridates, King of Pontus, the sixth Eupator, 132–63 B.C., spent every spare moment of his time inventing an antidote for poisons, and his remedy was used for nearly two thousand years as the Mithridate or, later, as theriac or treacle. His simple formula grew until the mixture contained one hundred and seventy-seven ingredients instead of merely rue, viper's flesh, walnuts, figs, and wine. Noted men from the days of Nero to Daniel DeFoe used this remedy as a preventive or curative for everything, especially during epidemics of the plague.[1] Incidentally it might be said that the Greeks were most humane in giving to prisoners under sentence of death or to the hopelessly sick and infirm such comfortable poisons as hemlock (conium maculatum), or they cut the radial artery to provide euthanasia.[1]

Even though the Greeks had so many medicines they seemed toward the end of their independence to have little faith in any but mithridate. Mahaffy (Old Greek Life, p. 71), says that the popular mind seized with enthusiasm on the theories of Hippocrates and his *vis medicatrix naturae*, along with their love of games and muscular exercises, and their religious beliefs in the help of the gods.

If we turn to the remarkable study of hygiene among the ancient Greeks written by Dr. Angelique G. Panayotatou, of Alexandria,[2] a descendant of the old Greek doctors, we find, p. 24, the following significant paragraph: "The Hellenic spirit left to all future ages its creative genius. It was the ferment of the social and intellectual organism . . . Its influence was never one-sided, because the Hellenic spirit never expressed itself merely by one idea but by creative acts." She emphasizes the fact that this creative spirit and the belief in hygiene carried mankind up to the days of Pasteur in spite of countless vicissitudes and an imperfect understanding of the causes of disease. It was only when the Greeks had been weakened by excesses of all kinds together with malaria and ergotism, that they fell an easy prey to their enemies, the Romans, and Rome gained some mighty booty when, in 146 B.C., Corinth fell.

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[1] For articles on this subject see Lynn Thorndike in Essays on the History of Medicine, presented to Sudhoff, p. 13; also article in the *Johns Hopkins Hospital Bulletin*, June, 1915, by Geo. Corner, who calls theriac a "glorified Dover's powder." Andromachus, Nero's physician, wrote a poem on Mithridate in 175 iambics.

[1] Among the remedies of the Greeks in the later days are listed: sedum for skin diseases, bitter almonds for cough, oak galls for metrorrhagia, veratrum for hysteria, dried figs and barley mixed with flax seed meal for a poultice, juniper oil on a tampon to prevent conception, spices and other odors for uterine troubles, myrtle berries for diabetes, narcissus oil for weak muscles, rue for catarrh, poppies for pain.

[2] Dr. Angélique G. Panayotatou, L'Hygiene chez les anciens Grecs. Paris, 1923.

We should not leave this important subject without a short résumé of the work of Greek medical women as outlined during the centuries when scientific medicine was gathering momentum for the future. We have seen that the Spartans, Lesbians, and Sicilian Greek women were always free to work or study where they chose, although Hesiod, 735 B.C., had protested against this freedom in vain. They may have called him an old fogy, for he said that what a man needed was a house, and a woman, and then an ox to plough with. He evidently

> "Deigned not to stoop to touch so slight a thing
> As the fine fabric of a woman's brain,
> So subtle as a passionate woman's soul."[1]

But, fortunately, at a later day, even in Athens, women were treated with respect provided they were honorable, moral, honest, and working for the good of the citizens.[2] Unfortunately the good were in the minority toward the last, and when Corinth fell hundreds of women were taken prisoners to Rome, but medical women brought the highest prices in the slave market and they became the leaders in the practical work of tending the sick and those in labor. Through all the "dark ages" (716–1453 A.D.), whether as pagans or Christians, women were commonly relied upon to do whatever men did not choose to do, and thus, until forced into oblivion by the Church, they kept their mental supremacy.

In conclusion it should be noted that from the women who walked with Plato in sight of the Parthenon at Athens to the present time there have always been some who were learned, delighting in scholarship, refinement, and self-determination, and who strove, as Aristotle had taught, to "excel that for which it is an example." Thus the sculptors of the fourth century excelled their forerunners, and the women of the period of Hippocrates and Herophilus became the predecessors of the best medical women of the nineteenth century. It is not, therefore, strange that the work of Dr. Mary Kalapothakes of Athens, during the last great war, proved her to be truly a modern follower of Agnodice and Phenaraete who lived nearly twenty-five hundred years earlier. These women made their work important, and of them it might be said as runs the legend on the monument of Euripides, who died four hundred years before Christ, "This monument, O Euripides, doth not make thee great, but thou makest the monument great."

(To Be Continued)

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[1] Levy, Amy. A Minor Poet and Other Verse, p. 28, (1891).

[2] Whiting, Lilian. Athens, the Violet Crowned, p. 314, (1913).

[From Franciscus Vallesius' Hippocrates. Coloniae, 1589.]

EDITORIAL

THE MOST INTERESTING NEWSPAPER IN THE UNITED STATES

THE ULSTER COUNTY GAZETTE OF JANUARY 4, 1800*

A FEW years ago I wandered into an old book store in New Orleans and found there a copy of the *Ulster County Gazette* dated January 4, 1800, containing within heavy black lines and borders an account of the death and funeral of George Washington. I eagerly bought the copy, believing that I had stumbled upon a rare find.

At a later date I spoke of this purchase to my friend Professor Sioussat of the University of Pennsylvania who told me that it might be genuine but that it was exceedingly unlikely as there were no known authentic copies extant.

Intrigued by this statement I made a brief investigation of the matter, in which I had the valuable help of Mr. Ernest Spofford of the Pennsylvania Historical Society, with the conclusive result that my copy is not authentic but is a reprint of what historians still call the most interesting newspaper in the United States.[1]

Individuals all over the country finding themselves possessed, either by purchase or by inheritance, of the January 4, 1800, *Ulster County Gazette*, are nearly always convinced that their particular copy is genuine. One lady offered hers to the American Antiquarian Society for $3800; another owner said that he had refused $500 for his copy. From ten to twelve letters come daily to the Librarian of the Ford Historical Collection at Dearborn, Mich.,[2] offering copies for sale, and Dr. A. S. W. Rosenbach tells me that his firm has a similar experience. And yet all the copies examined until recently showed in the quality of the paper, in the type and printing, in the arrangement of the columns and in other ways, that they were reprints.

Is it not strange that with so many spurious issues extant (large numbers were published and sold at the Centennial Exposition in Philadelphia) no authentic copy ever appeared?

At last, however, in November, 1930, the Library of Congress received information of the existence of three numbers of the old paper with the identical dates of the lost copies. The

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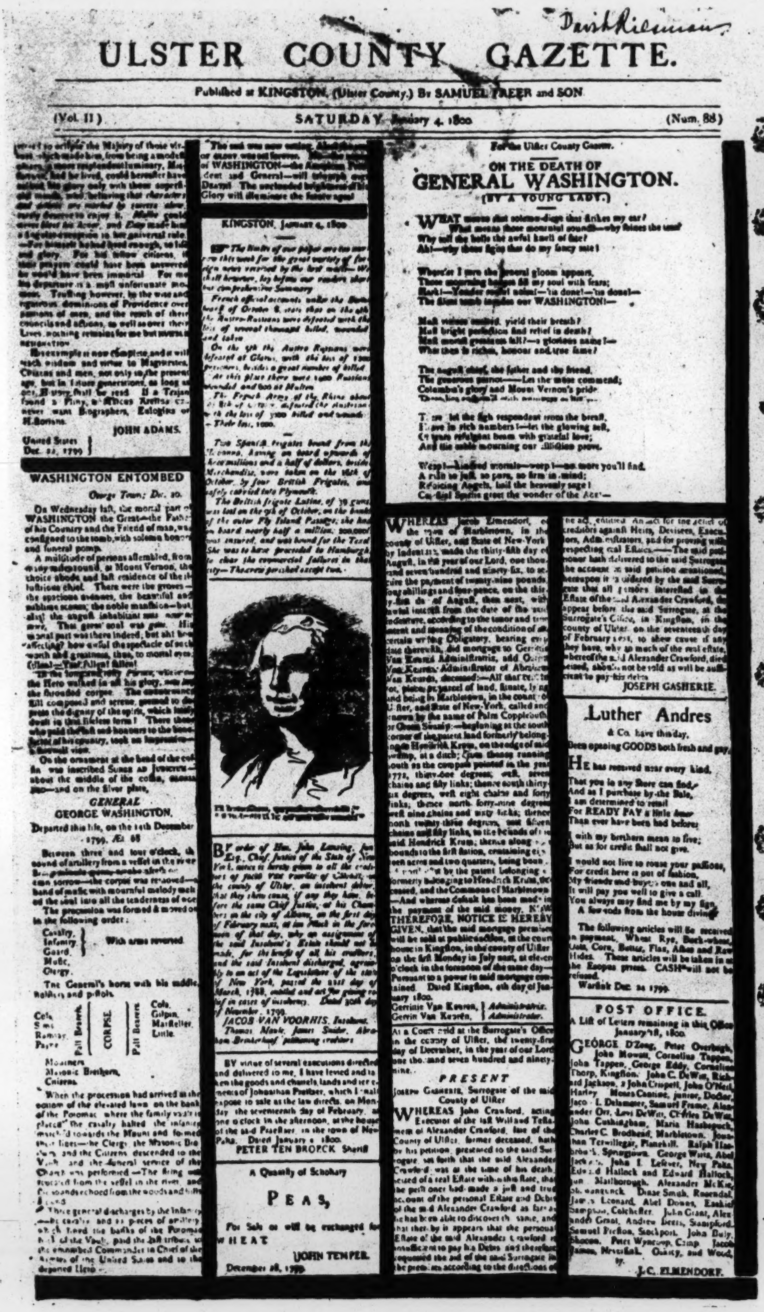
[1] Presumably the most interesting French newspaper is the copy of the Figaro containing Emile Zola's famous letter "J'Accuse."

[2] Wohlhagen, A. J., *N. Y. Hist. Soc. Quart. Bull.*, April, 1917, to January, 1918, p. 15.

* Read before the Section on Medical History of the College of Physicians, Philadelphia, February 8, 1932.



David Rileman

ULSTER COUNTY GAZETTE.

Publiſhed at KINGSTON, (Ulster County.) By SAMUEL FREER and SON

(Vol. II) SATURDAY, January 4, 1800. (Num. 88)

JOHN ADAMS.

United States
Dec. 22, 1799

WASHINGTON ENTOMBED

George Town; Dec. 20.

On Wedneſday laſt, the mortal part of WASHINGTON the Great—the Father of his Country and the Friend of man, was conſigned to the tomb, with ſolemn honors and funeral pomp.

A multitude of perſons aſſembled, from many miles around, at Mount Vernon, the choice abode and laſt reſidence of the illuſtrious chief. There were the groves—the ſpacious avenues, the beautiful and ſublime ſcenes, the noble manſion—but, alas! the auguſt inhabitant was now no more. That great ſoul was gone. His mortal part was there indeed; but ah! how affecting! how awful the ſpectacle of ſuch worth and greatneſs, thus, to mortal eyes, fallen!—Yes! fallen! fallen!

On the ornament at the head of the coffin was inſcribed SURGE AD JUDICIUM—about the middle of the coffin, GLORIA DEO—and on the ſilver plate,

GENERAL
GEORGE WASHINGTON,
Departed this life, on the 14th December
1799, Æt. 68

Between three and four o'clock, the ſound of artillery from a veſſel in the river ... the corpſe was removed—a band of muſic with mournful melody melted the ſoul into all the tenderneſs of woe.

The proceſſion was formed & moved on in the following order:

Cavalry,
Infantry,
Guard,
Muſic,
Clergy.
With arms reverſed.

The General's horſe with his ſaddle, holſters and piſtols.

Cols.
Sims
Ramſay
Payne
Pall Bearers.
CORPSE.
Pall Bearers.
Cols.
Gilpin,
Marſteller,
Little.

Mourners,
Maſonic Brethern,
Citizens.

When the proceſſion had arrived at the bottom of the elevated lawn on the banks of the Potomac where the family vault is placed, the cavalry halted the infantry marched towards the Mount and formed their lines—the Clergy, the Maſonic Brethren, and the Citizens, deſcended to the Vault, and the funeral ſervice of the Church was performed.—The firing was repeated from the veſſel in the river, and the ſounds echoed from the woods and hills around.

Three general diſcharges by the Infantry—the cavalry and 11 pieces of artillery, which lined the banks of the Potomac back of the Vault, paid the laſt tribute to the entombed Commander in Chief of the Armies of the United States and to the departed Hero.

KINGSTON, January 4, 1800.

☞ *The limits of our paper are too narrow this week for the great variety of foreign news received by the last mail—We shall however, lay before our readers short but comprehensive Summary.*

French official accounts ... state that on the 4th the Austro-Russians were defeated with the loss of several thousand killed, wounded and taken.

On the 5th the Austro Russians were defeated at Glarus, with the loss of 1500 prisoners, besides a great number of killed.

The British frigate Lutine, of 32 guns, was lost on the 9th of October, on the banks of the outer Fly Island Passage; she had on board nearly half a million, ... was insured, and was bound for the Texel. She was to have proceeded to Hamburgh to clear the commercial failures in that city.—The crew perished except two.

BY *order of Hon. John Lansing, jun. Esq., Chief Justice of the State of New-York, notice is hereby given to all the creditors of Jacob Van Voorhis ..., in the county of Ulster, an insolvent debtor, that they shew cause, if any they have, before the same Chief Justice, at his Chambers in the city of Albany, on the first day of February next, at ten o'clock in the forenoon of that day, why an assignment of the said Insolvent's Estate should not be made, for the benefit of all his creditors, and the said Insolvent discharged, agreeably to an act of the Legislature of the state of New York, passed the 21st day of March, 1788, entitled and act for giving relief in cases of insolvency. Dated 30th day of November, 1799.*

JACOB VAN VOORHIS, Insolvent.
Thomas Maule, James Snider, Abraham Brinkerhoff, petitioning creditors.

BY virtue of ſeveral executions directed and delivered to me, I have levied and taken the goods and chattels, lands and tenements of Johnathan Preſtner, which I shall expoſe to ſale as the law directs, on Monday the ſeventeenth day of February, at one o'clock in the afternoon, at the houſe of the ſaid Preſtner, in the town of New-Paltz. Dated January 1, 1800.

PETER TEN BROECK Sheriff

A Quantity of Schohary

PEAS,

For Sale or will be exchanged for WHEAT

JOHN TEMPER.

December 28, 1799.

For the Ulſter County Gazette.

ON THE DEATH OF
GENERAL WASHINGTON.
(BY A YOUNG LADY.)

WHAT means that ſolemn dirge that ſtrikes my ear?
What means thoſe mournful ſounds—why ſhines the tear?
Why toll the bells the awful knell of fate?
Ah!—why theſe ſighs that do my fancy mate!

Where'er I turn the general gloom appears,
Thoſe mourning badges fill my ſoul with fears;
Hark!—Yonder ſolemn ſound!—'tis done!—'tis done!—
The ſilent tomb inpriſons our WASHINGTON!—

Muſt virtue exalted, yield their breath?
Muſt bright perfection find relief in death?
Muſt mortal greatneſs fall?—a glorious name!—
What then is riches, honour and true fame?

The auguſt chief, the father and the friend,
The generous patriot——Let the muſe commend;
Columbia's glory and Mount Vernon's pride
[illegible]

... let the ſigh reſpondent from the breaſt,
... in rich numbers!—let the glowing reſt,
... refulgent beam with grateful love;
And the ſable mourning our affliction prove.

Weep!—kindred mortals—weep!—no more you'll find,
A man ſo juſt, ſo pure, ſo firm in mind;
Rejoicing Angels, hail the heavenly ſage!
Cœleſtial Spirits greet the wonder of the Age!—

WHEREAS Jacob Elmendorf, of the town of Marbletown, in the county of Ulſter, and State of New-York by indenture made the thirty-firſt day of Auguſt, in the year of our Lord, one thouſand ſeven hundred and ninety-ſix, to ſecure the payment of twenty-nine pounds, four ſhillings and four-pence, on the thirty-firſt day of Auguſt, then next, with lawful intereſt from the date of the ſaid indenture, according to the tenor and true intent and meaning of the condition of a certain writing Obligatory, bearing even date therewith, did mortgage to Gerritje Van Keuren Adminiſtratrix, and Gerrit Van Keuren, Adminiſtrator of Abraham Van Keuren, deceaſed:—All that certain lot, piece or parcel of land, ſituate, lying and being in Marbletown, in the county of Ulſter, and State of New-York, called and known by the name of Palm Copplebuſh or Green Swamp:—beginning at the ſouth corner of the patent land formerly belonging to Hendrick Krum, on the edge of said ſwamp, at a ditch; from thence running ſouth as the compaſs pointed in the year 1772, thirty-one degrees, weſt, ſeven chains and fifty links; thence ſouth thirty-ſix degrees, weſt eight chains and forty links; thence north forty-nine degrees weſt nine chains and sixty links; thence north twenty-three degrees, eaſt fifteen chains and fifty links, to the bounds of the ſaid Hendrick Krum; thence along the bounds to the firſt ſtation, containing eighteen acres and two quarters, being bounded ... by the patent belonging ... formerly belonging to Hendrick Krum, deceaſed, and the Commons of Marbletown.—And whereas default has been made in the payment of the ſaid money, NOW THEREFORE, NOTICE IS HEREBY GIVEN, that the ſaid mortgage premiſes will be ſold at public auction, at the court houſe in Kingſton, in the county of Ulſter on the firſt Monday in July next, at eleven o'clock in the forenoon of the ſame day—Purſuant to a power in ſaid mortgage contained. Dated Kingſton, 4th day of January 1800.

Gerritje Van Keuren, *Adminiſtratrix.*
Gerrit Van Keuren, *Adminiſtrator.*

At a Court held at the Surrogate's Office in the county of Ulſter, the twenty-firſt day of December, in the year of our Lord one thouſand ſeven hundred and ninety-nine.

PRESENT

Joseph Gasherie, Surrogate of the ſaid County of Ulſter

WHEREAS John Crawford, acting Executor of the laſt Will and Teſtament of Alexander Crawford, late of the County of Ulſter, farmer deceaſed, hath by his petition, preſented to the ſaid Surrogate, ſet forth that the ſaid Alexander Crawford was at the time of his death, ſeized of a real Eſtate ..., that the perſonal Eſtate ... account of the perſonal Eſtate and Debts of the ſaid Alexander Crawford as far as he has been able to diſcover the ſame, and that thereby it appears that the perſonal Eſtate of the ſaid Alexander Crawford is inſufficient to pay his Debts and therefore requeſted the aid of the ſaid Surrogate in the premiſes according to the directions of the act, entitled An act for the relief of creditors againſt Heirs, Deviſees, Executors, Adminiſtrators, and for proving wills reſpecting real Eſtates.——The ſaid petitioner hath delivered to the ſaid Surrogate the account in ſaid petition mentioned, whereupon it is ordered by the ſaid Surrogate that all perſons intereſted in the Eſtate of the ſaid Alexander Crawford, do appear before the ſaid Surrogate, at the Surrogate's Office, in Kingſton, in the county of Ulſter on the ſeventeenth day of February next, to ſhew cauſe if any they have, why ſo much of the real eſtate, whereof the ſaid Alexander Crawford, died ſeized, ſhould not be ſold as will be ſufficient to pay his debts.

JOSEPH GASHERIE.

Luther Andres

& Co. have this day,
Been opening GOODS both freſh and gay,

HE has received near every kind,
That you in any Store can find,
And as I purchaſe by the Bale,
I am determined to retail
For READY PAY a little *lower*
Than ever have been had before;

I with my brethern mean to live;
But as for credit ſhall not give.

I would not live to rouſe your paſſions,
For credit here is out of faſhion,
My friends and buyers one and all,
It will pay you well to give a call.
You always may find me by my ſign,
A few rods from the houſe divine.

The following articles will be received in payment, Wheat Rye, Buck-wheat, Oats, Corn, Butter, Flax, Aſhes and Raw Hides. These articles will be taken in at the Eſopus prices. CASH will not be refuſed.

Warſink Dec. 24 1799.

POST OFFICE.

A Liſt of Letters remaining in this Office January 1ſt, 1800.

GEORGE D'Zeng, Peter Overbagh, John Mowatt, Cornelius Tappen, John Tappen, George Eddy, Cornelius Thorp, Kingſton. John C. DeWitt, Richard Jackson, 2 John Crispell, John O'Neil, Harley Moses Cantine, junior, Doctor, Jacob I. Delameter, Samuel Frame, Alexander Orr, Levi DeWitt, Charles DeWitt, John Cuſhingham, Maria Haſbrouck, Charles C. Brodhead, Marbletown. Jonathan Terwillegar, Plane-hill. Ralph Haſbrouck, Sprugtown. George Witts, Abel Jackson, John I. Lefever, New Paltz, Edward Hallock and Edward Hallock, jun. Marlborough. Alexander McKie, Shawangunk. Dinae Smith, Rosendal, James Leonard, Abel Downs, Ezekiel Sampson, Colcheſter. John Grant, Alexander Grant, Andrew Beers, Stampford, Samuel Preſton, Stockport. John Daly, Shocon. Peter Wyncoop, Camp. Jacob James, Newcaſtal. Quincy, and Wood, by

J.C. ELMENDORF.

Gen. Geo. Washington's Death, and Funeral of Our First President, 1800.

three successive issues, December 24, 1799, January 4 and 11, 1800, were in the possession of Mrs. Mary Crawford Lydon, a descendant of Petrus, or Peter Decker, a Revolutionary soldier who had lived in Ulster County. As a thorough investigation showed that there could be no doubt whatever of their genuineness, they were acquired by the Congressional Library. An account of the transaction, together with the reproduction of the Washington number, was published[3] by R. W. G. Vail.

The *Ulster County Gazette* was established in 1798 by Samuel Freer and his son Samuel S. Freer as a staunch Federalist organ. On the death of the elder Freer the paper was continued by his son until 1822 when it and the Federalist Party expired together.

The number of December 28, 1799, of the *Gazette* contains in the form of a letter from Alexandria, Virginia, dated December 15th, an announcement of the death of Washington on December 14th. It is appropriately draped in black.

The next number, that of January 4, 1800, is largely given over to matters pertaining to General Washington's life. It gives on the first page the details of the funeral, the order of the procession, the arrangement of the coffin with the position and names of the pallbearers, a picture of George Washington, and a poem of six stanzas "For the Ulster Gazette on the Death of General Washington (By a young lady)."

The first page prints in addition a number of announcements, a rhymed advertisement by one Luther Andres, and a list of unclaimed letters remaining in the Post Office January 1, 1800.

In the third column of the last page is John Marshall's Eulogy on George Washington, ending with the resolution prepared, I believe, by General Henry (Lighthorse Harry) Lee, in which is contained the immortal phrase "First in War, First in Peace, First in the Hearts of His Country," not as it is generally quoted: "In the Hearts of His Countrymen."

In the last column of the fourth page is President Adams' reply to the resolutions of condolence of the House and of the Senate. Curiously, half of the speech of the President to the Senate is in this column and the other half at the top of the first column on page one.

The two inside pages which in my copy are devoid of mourning bands contain reprints of the Transactions of Congress, sheriff's announcements, and various commercial and other advertisements. In an address to the President the Senate deplores the fact that "the acts and calumnies of factious and designing men have excited open rebellion a second time in Pennsylvania, and thereby compelled the employment of a military force to aid the civil authorities in the execution of the laws."

When I compare my copy with the original as reproduced by Mr. Vail I find the arrangement of the printed matter completely altered. All the Washington material which in the original issue appears on the two inside pages, is in mine and in a number of other reprints moved to page one and page four. There is also inserted in my copy on the first page a portrait of Washington and on the right margin is printed in large old English type the legend "Gen. Geo. Washington's Death, and Funeral of Our First President 1800."

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[3] *Bull. N. Y. Hist. Soc.*, April, 1931.

Mr. Vail has made a study of the many reprints published and has collected a total of 67 varieties.[4]

On comparing the descriptions of these I find that my copy belongs in all outward respects to No. 59. If that be true then it was printed either in 1889 or in 1894–95 by a man who called himself "Back Number Budd," 1280 Broadway, New York. According to Vail the paper of this issue is of woodpulp; nevertheless a well-known Philadelphia printer to whom I submitted the copy tells me that the paper is made from rags and that it is certainly more than seventy-five years old. Be that as it may, the evidence is strongly in favor of the date given by Vail.

The means of distinguishing between the genuine and the spurious copies have been listed in a circular of the Library of Congress and are as follows[5]:

1. The original should be printed on the paper used in 1800, handmade from rags, soft, pliable and rough in texture.
2. This paper should have as watermarks throughout, slender parallel lines $1\frac{1}{16}$ to $1\frac{3}{16}$ inches apart.
3. Title in italic capitals should measure $6\frac{15}{16}$ inches in length.
4. Print should show the blurred edges of hand inked, hand press work.
5. The second column on page 1 should measure $2\frac{7}{8}$ inches in width between rules, and $13\frac{3}{4}$ inches in length.
6. The old style "s" should appear frequently as in the words "Published," and "Ulster" in the heading, and in the words "President," "House," "Representatives," and many more in the text.
7. The last line of page 1, column 1, should read "liberal execution of the treaty of amity."
8. One full-length mourning slug should appear on page 1, column 2; 2 full-length and 5 short slugs on page 2; and 2 full-length slugs on page 3.
9. Mourning rules should be used between columns and across top and bottom and along outer edge of pages 2 and 3.
10. The "Last Notice" on page 3, column 2, concerns "the estate of johannis Jansen," and should be signed by "Johannis I. Jansen."

Mr. Joseph Gavit suggests that to No. 10 should be added that the word "deceased" is spelled "Deccased," the second "c" being out of line.

With the foregoing criteria as a guide there is no reason why any one should allow himself to be hoodwinked into the purchase at high price of a spurious copy of the *Ulster County Gazette.*

DAVID RIESMAN.

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[4] Vail, R. W. G., The *Ulster County Gazette* and its illegitimate offspring. Pub. by the N. Y. Public Library, Nov., 1930.

[5] Vail. *Bull. N. Y. Hist. Soc.*, April, 1931, p. 207.

BOOK REVIEWS

Aus der Medizin des Rinascimento. An der Hand des Leben von Benvenuto Cellini Nach der Ubersetzung Goethes, By Paul Strassmann, Dr. Med., A. O. Prof. Fur Geburtshilfe und Gynäkologie an der Universität Berlin, Geh. San. Rat. 22 illus., Leipzig, Georg Thieme, 1930.

Strassmann, a professor of obstetrics and gynecology in the University of Berlin, recently delivered an address on the relation of medicine and art, which is now published in a beautifully printed and illustrated quarto by Georg Thieme.

Like nearly every German literary and scientific writer Strassmann begins by quoting Goethe; very justly in this case, since it was Goethe who did more than anyone else, with the possible exception of Burckhardt, to awaken an interest among Germans in Italian art. Goethe translated the Life of Benvenuto Cellini and supplemented it with incisive critical comments.

Making Cellini's life the basis of this essay, Strassmann first discusses the medical experiences of Cellini, which are of perennial interest. Cellini, it seems, while casting his masterpiece, the Perseus, had a fever lasting nineteen hours. This fever has not unreasonably been explained (by Pinkus) as zinc-fever, our modern spelter chills.[1]

Many other subjects are touched upon by Strassmann: Cellini's physicians, Jacopo Girolamo Berengario da Carpi and Guido Guidi, the latter the discoverer of the vidian canal carrying the petrosal nerve; Cellini's self-confessed relations with courtesans and prostitutes; his illegitimate children; homosexuality, and various other matters of interest in his colorful life.

In the concluding section Strassmann eloquently portrays the colossal changes going on in our present Rinascimento, the acme of which is man's conquest of the air.

Although the book has but 56 pages, it gives abundant evidence of the author's profound knowledge of that fascinating epoch, the Italian Renaissance.

David Riesman.

Antony von Leeuwenhoek and His "Little Animals," being some Account of the Father of Protozoology and Bacteriology and his Multifarious Discoveries edited, from his printed works, unpublished manuscripts, and contemporary records, by Clifford Dobell, F.R.S. Published on the 300th Anniversary of his Birth. N. Y., Harcourt, Brace & Co., 1932.

In a most delightful "Epistle to the Reader" Mr. Dobell describes the manner in which his interest in Leeuwenhoek and his work was first awakened by finding that the great Dutchman was the first to observe and study the protozoa, and that he also first discovered the microscopic organisms which we call bacteria. His curiosity was stimulated by the fact that the Dutchman's observations were published in the *Philosophical Transactions of the Royal Society of London*, and that he was a member of that Society. When he sought to find out something about the author of the observations he found, however, not only many discrepancies in the various accounts of his life but very many absolutely false statements. Even in the Philosophical Transactions his name is spelled in nineteen different ways. Thus he was variously said to have been a physician, a surgeon, even a professor, to none of which titles he could lay claim. Probably most English and American readers know Leeuwenhoek's biography chiefly through Sir Benjamin Ward Richardson's account of him in his "Disciples of Aesculapius." Richardson termed him "Bedellus immortalis, the 'immortal beadle,'" making him, as Dobell says "a sort of village beadle," because he held the appointment of "chamberlain of the Council-Chamber of the Worshipful Sheriffs of Delft," which as Dobell points out was a sinecure with a very respectable salary attached. Leeuwenhoek also had a draper's shop as Dobell proves by reproducing some of his bills for goods sold to his fellow-citizens, and it is interesting to learn that he was in addition a qualified surveyor. Though Leeuwenhoek's letters in the Philosophical Transactions are in Latin, the originals in the archives of the Royal Society were written in Dutch, their author knowing no language but his own, the translations having been made by Oldenburg, the Secretary of the Royal Society, and after his death by other Fellows of the Society; though in some instances Leeuwenhoek sent a Latin transcript made by some other hand with his letter. As is well known Oldenburg was most energetic in searching out foreigners who were "working for the promotion of natural knowledge," and getting them to send records of their observations to the Royal Society, one of his most notable achievements was to secure the publication of Malpighi's work by the Society, and it was while Oldenburg was Secretary that Leeuwenhoek in 1673 began the series of communications which he continued to send the Society at frequent intervals until his death, fifty years later.

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[1] Riesman and Boles, Spelter chills. *Am. J. Med. Sci.*, 153: 376, 1917.

In 1680 Leeuwenhoek was elected a Fellow. At his death he bequeathed the Society a cabinet containing twenty-six of his microscopes made with his own hands. Dobell quotes at length the description of this invaluable gift made by Martin Folkes shortly after they were received by the Society. Unfortunately these microscopes have absolutely vanished, an irreparable loss, not only to the Society but to the world. Leeuwenhoek ground the lenses and constructed the metal work of all his microscopes with his own hands. After his daughter's death in 1747 an auction was held of those in her possession. These amounted to no less than 247 completely finished microscopes and 172 lenses mounted between little plates. According to Professor Crommelin there are but eight microscopes made by Leeuwenhoek now known to be in existence, and though instruments said to have been made by him are occasionally offered for sale, Dobell warns prospective purchasers that they are pretty certain to be facsimiles and not genuine.

Aside from the papers published in the *Philosophical Transactions* and a small collection of translated excerpts edited by Hoole, but little of Leeuwenhoek's work is available to English readers. Dobell has only translated the observations which bear on protozoology and bacteriology but they are a revelation of the greatest importance and he has accomplished his difficult task most admirably. Not only are the translations excellent but the notes which accompany them are, as might be expected from so eminent an authority, most illuminating and he settles once for all many vexed questions as to the real nature of some of the objects Leeuwenhoek saw and described. Because of the secrecy observed by Leeuwenhoek as to how he ground and made his lenses many persons have thought that he must have been gifted with extra powers of vision, deeming it impossible that with a simple microscope such things could have been seen. Dobell has so thoroughly studied every feature of Leeuwenhoek's work that he is able to explain and prove that he did construct lenses with which he was able to see and accurately describe objects as no one else has done save with a compound microscope.

Space does not permit a further review of this great work on a great subject, otherwise it would be pleasant to touch on some of the hitherto unknown details so well told of the wonderful life of one of the most interesting figures in the history of medicine. Leeuwenhoek died when he was ninety years old, in full possession of his faculties; thirty-six hours before his death he dictated a letter regarding some sand which had been sent him for examination. In reading this book we have been constantly reminded of another remarkable piece of constructive research and criticism, Lowes' "Road to Xanadu." There is the same sympathetic insight, indefatigable research, and minute accuracy, and as a result an outstanding work which unfolds the obscure workings of a great genius. The book is accompanied by a number of essential as well as well-reproduced illustrations and facsimiles; an excellent bibliography of Leeuwenhoek's writings; a list of references and sources, and a well-made index.

BIOGRAPHISCHES LEXIKON DER HERVORRAGENDEN ÄRTZE ALLER ZEITEN UND VÖLKER. Under the Supervision of Dr. E. Gurlt and Dr. A. Wernich, Ed. by Dr. August Hirsch. Ed. 2, revised and enlarged by Prof. W. Haberling and Prof. H. Vierardt with the cooperation of Prof. Hübotter. Vol. 4, Maack-Salzmann. Berlin, Urban and Schwarzenberg, 1932.

The preceding volumes of this encyclopedic biographical dictionary have been reviewed as they were published previously in these columns. The present volume carries the biographies in alphabetical order from Maack to Salzmann. The biographies are written by different hands and, as would be expected, vary considerably in their value, but the whole book shows evidence of careful editorial supervision and direction, and this is more so in the present than in the earlier volumes. American physicians and surgeons are well represented and have full justice done their achievements. The work is an indispensable aid to those who write on medical history and biography. The bibliographies are concise but practical for each biography.

MANUSCRIPTA MEDICA. A Descriptive Catalogue of the Manuscripts in the Library of the Medical Society of London. By Warren R. Dawson. Pub. for the Medical Society of London. London, John Bale, Sons & Danielsson, Ltd., 1932.

This is a most interesting description of the valuable collection of medical manuscripts in the library of the Medical Society of London. The provenance of many of them is unknown as the original register has disappeared but a number came from the library of Dr. Askew and Dr. John Coakley Lettsom presented some to the Society. They have all in recent years been put in excellent condition and this catalogue by Dr. Dawson will stimulate interest in their study. The collection is very various. There are several commonplace books and collections of household and medical recipes and many volumes of notes on the lectures of Boerhaave, Cullen, John Hunter and other leading teachers of the eighteenth century. A very interesting group consists of four volumes containing the minutes of the Lyceum Medicum Londinense. The society was founded by John Hunter and George Fordice in 1785. As Dr. Dawson states, these are a valuable record for medical biographers. The collection includes some very remarkable fifteenth century Greek medical texts in excellent condition, and a manuscript of the Passionarius of Gariopontus written probably about 1350. There is one leechbook, written about the middle of the fifteenth century. The Medical Society of London has done a great service by the publication of this informative catalogue of its valuable collection, and it has been fortunate in having the service of so excellent an editor.

ANNALS OF MEDICAL HISTORY

Editor: FRANCIS R. PACKARD, M.D., Philadelphia

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CONTENTS OF NEW SERIES, VOLUME ONE, 1929

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CONTENTS OF NEW SERIES, VOLUME TWO, 1930

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CONTENTS OF NEW SERIES, VOLUME THREE, 1931

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